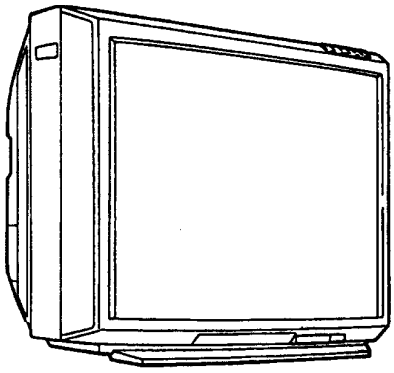
KV-K29CF1
RM-845P

SERVICE MANUAL

PX Model
Chassis No. SCC-G98A-A



G3F CHASSIS

MODELS OF THE SAME SERIES	
KV-K29CF1	KV-K21MF1/K25MF1 KV-K25MF1J/KV-K29MF1J
KV-K29MF1	
KV-K25SN21/K29SN21	

SPECIFICATIONS

Power requirements	110-240 V AC, 50/60Hz
Power consumption	171 W
Television system	B/G, I, D/K, M
Color system	PAL, PAL 60, SECAM, NTSC 4.43, NTSC 3.58
Channel coverage	B/G VHF: E2 to E12/UHF : E21 to E69/ CATV : S01 to S03, S1 to S41 I UHF : B21 to B68/ CATV : S01 to S03, S1 to S41 D/K VHF: R1 to R12/UHF : R21 to R60/ CATV : S01 to S03, S1 to S41 M VHF: A2 to A13/UHF : A14 to A79/ CATV : A-8 to E, G to W+25, W+27 to W+84
Antenna	75-ohm external antenna terminal for VHF/UHF
Audio output (speaker)	13W×2
Number of terminal	Video Input : 3 Output : 1 Audio Input : 3 Output : 1 S1-Video Input : 2 Y : 1 Vp-p, 75 ohms, unbalanced, sync negative G : 0.286 Vp-p, 75 ohms
Picture tube	Super Trinitron
Tube size	29-inch measured diagonally
Screen size	68-cm measured diagonally
Dimensions (W/H/D)	694×578×527 mm
Weight	50 kg
Supplied accessories	Remote Commander RM-845P (1) Size AA (R6) battery (1) U/V mixer
Optional accessories	TV stand SU-K1G Magic Commander RM-829, RM-848

Design and specifications are subject to change without notice.

MICROFILM

TRINITRON® COLOR TV

SONY®

TABLE OF CONTENTS

Section	Title	Page
1. GENERAL		
1-1.	Hooking Up	4
1-2.	Presetting Channels	4
1-3.	Changing the Menu Language	5
1-4.	Introducing the Menu	5
1-5.	Watching the TV	6
1-6.	Setting the Remote Command Mode	6
1-7.	Adjusting the Picture	7
1-8.	Adjusting the Sound	7
1-9.	Watching Two Pictures Simultaneously	8
1-10.	Customizing the TV (Set Up)	9
1-11.	Troubleshooting	10
2. DISASSEMBLY		
2-1.	Rear Cover Removal	11
2-2.	Switch Block Removal	11
2-3.	Speaker Removal	12
2-4.	Chassis Assy Removal	12
2-5.	Service Position	13
2-6.	Extension Cable	13
2-7.	Demagnetization Coil Removal	14
2-8.	Picture Tube Removal	15
2-9.	Harness Location	16
3. SET-UP ADJUSTMENTS		
3-1.	Beam Landing	18
3-2.	Convergence	19
3-3.	Focus Adjustment	21
3-4.	G2 (Screen) and White Balance Adjustments	22
4. SELF DIAGNOSIS FUNCTION		23
5. CIRCUIT ADJUSTMENTS		
5-1.	Adjustments with Commander	24
5-2.	Adjustment Method	25
5-3.	Display Position Adjustment	28
5-4.	A Board Adjustment	28
5-5.	D1 Board Adjustment	29
5-6.	Picture Distortion Adjustment	30
6. DIAGRAMS		
6-1.	Block Diagram	31
6-2.	Frame Schematic Diagram	35
6-3.	Circuit Boards Location	37
6-4.	Schematic Diagrams and Printed Wiring Boards	
(1)	Schematic Diagrams of D, F1, F2, H1 and H2 Boards	43
(2)	Schematic Diagram of A Board	47
(3)	Schematic Diagrams of A2, P and VM Boards	57
(4)	Schematic Diagrams of C and D1 Boards	61
6-5.	Semiconductors	67
7. EXPLODED VIEWS		
7-1.	Chassis	69
7-2.	Picture Tube	70
8. ELECTRICAL PARTS LIST		71

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

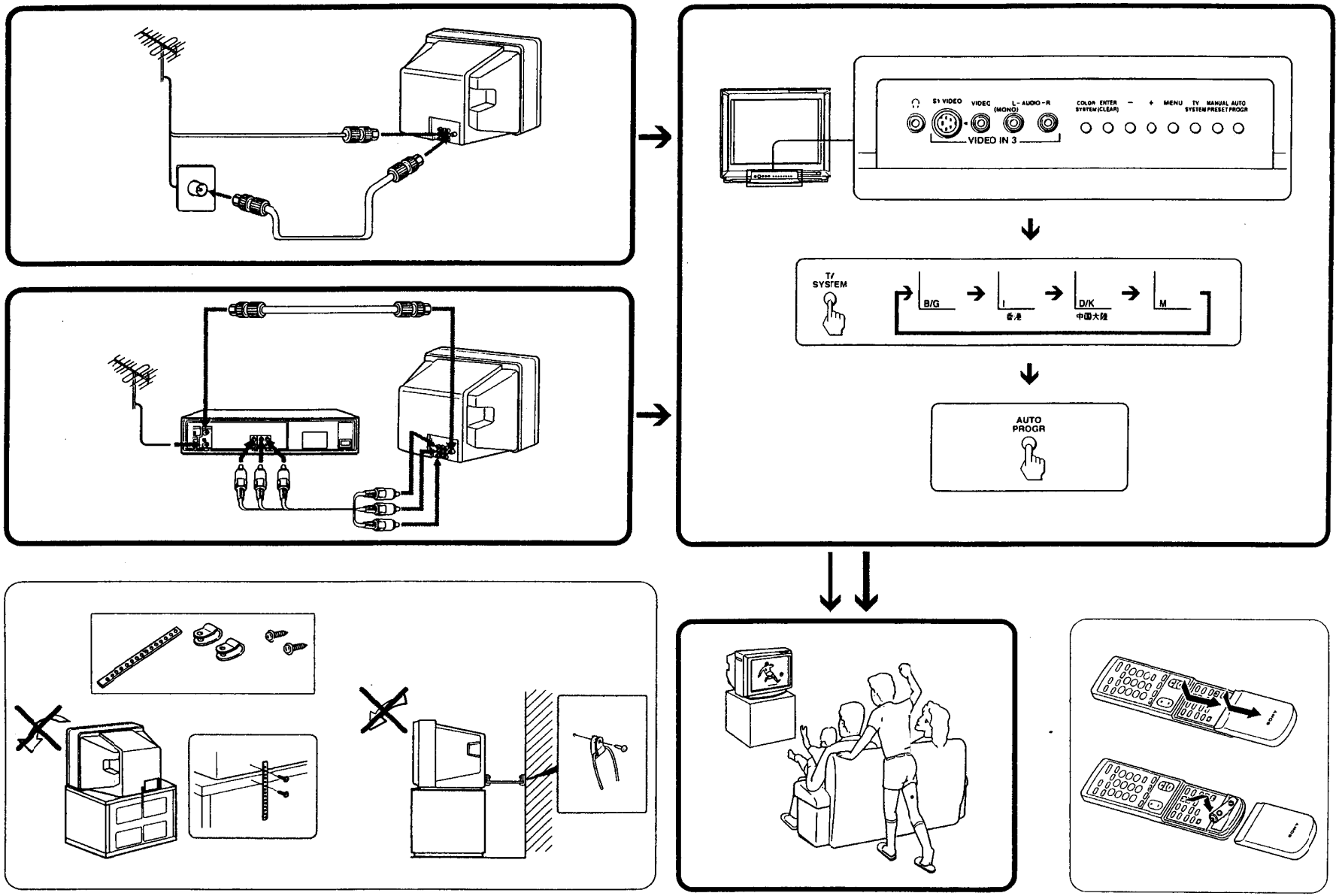
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

420

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.

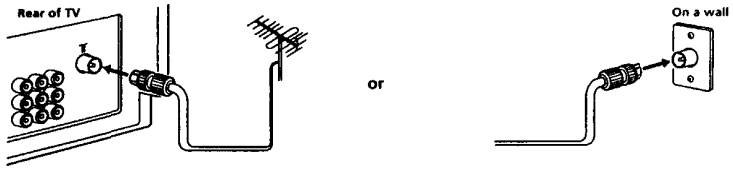
SECTION 1
GENERAL



1-1. HOOKING UP

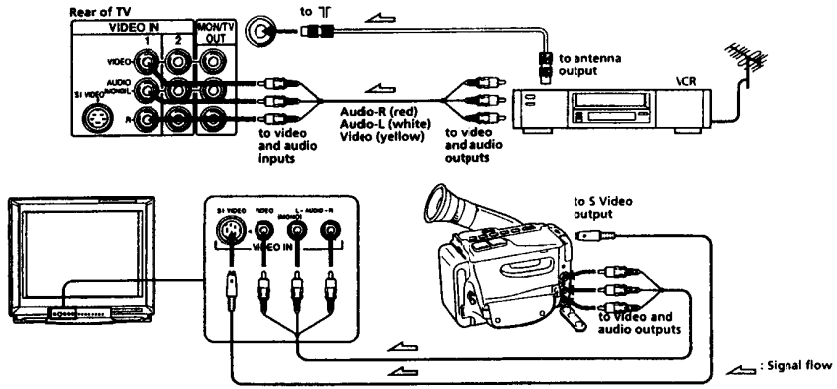
Connecting a VHF antenna or a combination VHF/UHF antenna — 75-ohm coaxial cable (round)

Attach an optional IEC antenna connector to the 75-ohm coaxial cable.
Plug the connector into the Y (antenna) socket at the rear of the TV.



Hooking up to optional equipment

You can connect optional audio/video equipment to this TV such as a VCR, multi disc player, camcorder, headphones, or stereo system.



When connecting a monaural VCR
Connect the yellow plug to VIDEO and the black plug to AUDIO-L (mono).

If both S1-Video and video signals are input
The S1-Video input signal is selected. To view a video signal, disconnect the S1-Video connection.

Note on the S1-Video signal
When inputting the S1-Video signal through the VIDEO IN 1 or VIDEO IN 3 jack, set wide mode to OFF if you do not want to display the picture in wide mode (see page 17).

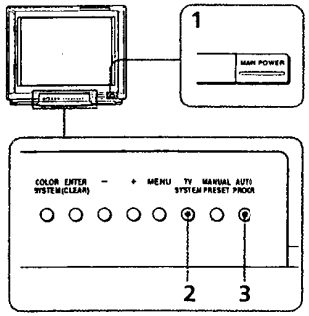
Note on the video input
When no signal is input, the screen becomes blue.

1-2. PRESETTING CHANNELS

You can preset TV channels easily by storing all the receivable channels automatically. You can also preset channels manually or disable program positions.

Presetting channels automatically

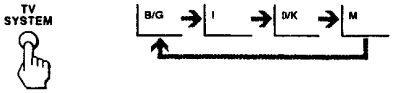
You can preset up to 100 TV channels in numerical sequence from program position 1.



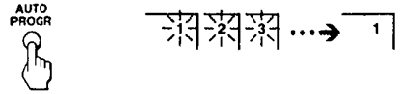
1 Press MAIN POWER.

When the TV is in standby mode after pressing MAIN POWER, press POWER on the TV or remote commander.

2 Press TV SYSTEM to select your local TV system.



3 Press AUTO PROGR.



To start presetting channels automatically from the specified program position

1 Press MANUAL PRESET.
2 Press TV SYSTEM to select your local TV system.
3 Press PROGR +/– to select the program position.
4 Press AUTO PROGR.

Presetting channels manually

To change the program position for a channel or to receive a channel with a weak signal, preset the channel manually.
Example: To preset a channel in program position 8

1 Press MANUAL PRESET.

2 Press PROGR +/– until "8" appears.

3 Press TV SYSTEM to select your TV system.

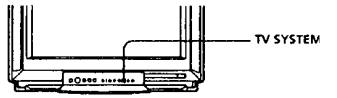
4 Press + or – until the channel you want appears.

5 Press MANUAL PRESET.

To preset other channels
Repeat steps 1 to 5.

If the TV system is not properly selected
The color of the picture may be poor and/or the sound may be noisy. In this case, select the appropriate TV system.

1 Press PROGR +/– to select the program position.
2 Press TV SYSTEM until the picture and sound become normal.



Note
- The setting of the TV SYSTEM is memorized for each program position.

Disabling program positions

By disabling unused or unwanted program positions, you can skip those position when you press PROGR +/–.
Example: To disable program position 8

1 Press PROGR +/– until "8" appears.

2 Press MANUAL PRESET.

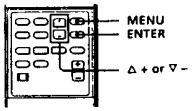
3 Press ENTER (CLEAR) on the TV.
To disable other program positions, repeat steps 1 to 3.

4 Press MANUAL PRESET.

To cancel the skip setting
Preset the channel manually or automatically again.

1-3. CHANGING THE MENU LANGUAGE

If you prefer Chinese to English, you can change the menu language. You can use buttons on both the remote commander and the TV.



1 Press MENU.

2 Press △ + or ▽ – to move the cursor (▶) to LANGUAGE.

3 Press ENTER.

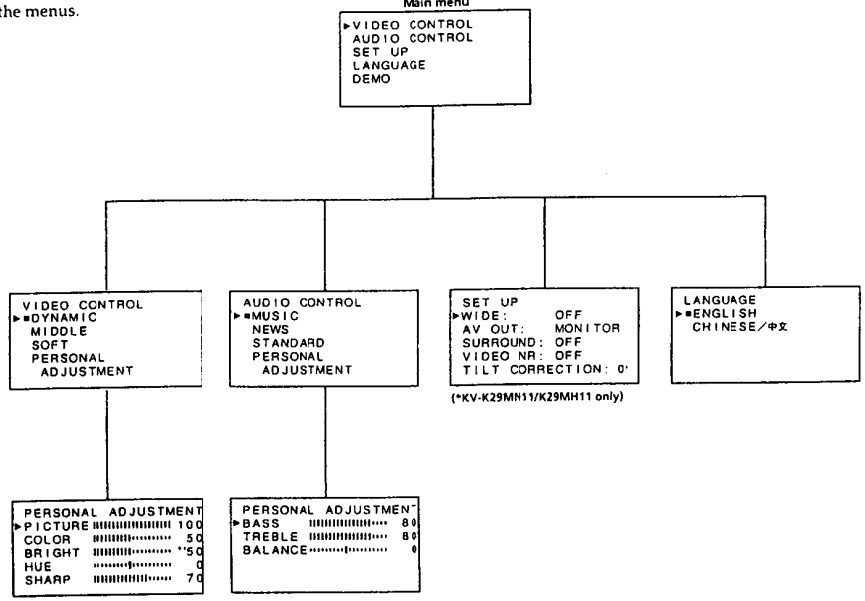
4 Press △ + or ▽ – to select CHINESE.

5 Press ENTER.

6 Press MENU to return to the normal screen.

1-4. INTRODUCING THE MENU

You can use the on-screen menus to set the picture quality, sound, and other settings. You can use buttons on both the remote commander and the TV to operate the menus.



(*KV-K29MN11/K29MH11 only)

Getting back to the previous menu

Move the cursor (▶) up to the first line of each menu (except the main menu), and press ENTER.

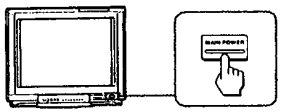
Cancelling the menu screen

Press MENU.

Notes
- If more than 90 seconds elapse after you press a button, the menu screen disappears automatically.

1-5. WATCHING THE TV

1 Press MAIN POWER to turn the TV on.

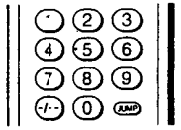


When the TV is in standby mode after pressing MAIN POWER, press POWER on the TV or remote commander.

2 Select the TV channel you want to watch.

To select a channel directly

Press a number button.



To select a two-digit channel, press "-/--" before the number buttons.

For example: to select channel 25, press "-/--," then "2" and "5."

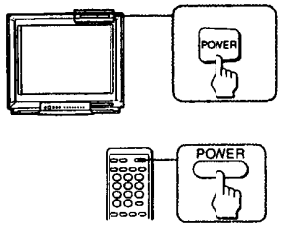
To scan through channels

Press PROGR +/– until the channel you want appears.

3 Press VOL +/– to adjust the volume.

Switching off the TV

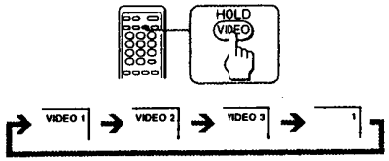
To switch off the TV temporarily, press POWER.



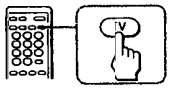
To switch off the TV completely, press MAIN POWER. If the main power is turned off in standby mode, the STANDBY indicator continues to light up for a while.

Watching the video input

Press VIDEO/HOLD.

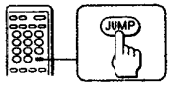


To watch TV, press TV.



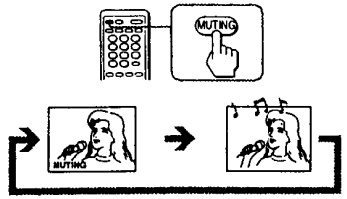
Switching back quickly to the previous channel

Press JUMP.



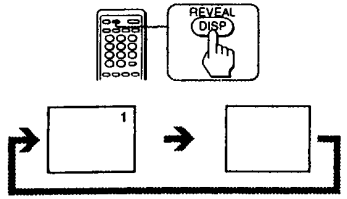
Muting the sound

Press MUTING.



Displaying on-screen information

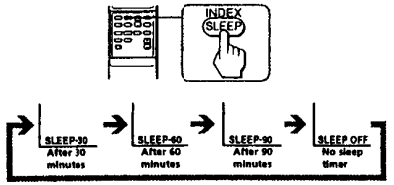
Press DISP/REVEAL.



Setting the Sleep Timer

You can set the TV to turn off automatically after the length of time you specify elapses.

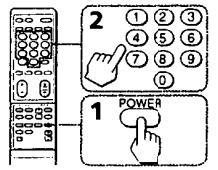
Press SLEEP/INDEX.



To cancel the Sleep Timer press SLEEP/INDEX repeatedly until "SLEEP OFF" appears, or turn the TV off.

1-6. SETTING THE REMOTE COMMAND MODE

You can use the supplied remote commander to operate this TV and Sony video equipment, such as a VCR or multi disc player. To operate Sony video equipment, first set the remote command mode for the video equipment you want to use.

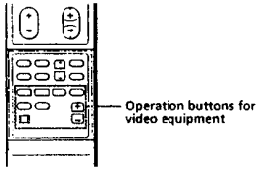


1 Press and hold the POWER button.

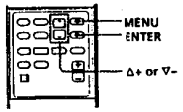
2 Press the number buttons that correspond to the remote command mode.

Mode Number buttons	Remote command mode
0 then 1	VTR1 (e.g. Beta format VCR)
0 then 2	VTR2 (e.g. 8 mm format VCR)
0 then 3	VTR3 (e.g. VHS format VCR)
0 then 4	MDP (multi disc player)

After setting the remote command mode, you can use the following buttons to operate the video equipment.



1-7. ADJUSTING THE PICTURE



1 **Press MENU.**

```
▶VIDEO CONTROL
 AUDIO CONTROL
 SET UP
 LANGUAGE
 DEMO
```

2 **Press Δ+ or ∇– to move the cursor (▶) to VIDEO CONTROL.**

```
▶VIDEO CONTROL
 AUDIO CONTROL
 SET UP
 LANGUAGE
 DEMO
```

3 **Press ENTER.**

```
 VIDEO CONTROL
▶■DYNAMIC
  MIDDLE
  SOFT
  PERSONAL
    ADJUSTMENT
```

4 **Press Δ+ or ∇– to select the setting, and press ENTER.**

Select	To
DYNAMIC	Display more contrast picture
MIDDLE	Display normal contrast picture
SOFT	Display picture suitable for movies and video games
PERSONAL	Display the picture that is adjusted using ADJUSTMENT
ADJUSTMENT	Make specific adjustments. See "Adjusting the picure precisely."

5 **Press MENU to return to the normal screen.**

Adjusting the picture precisely

You can adjust the picture quality precisely with the ADJUSTMENT option. The adjusted settings are stored in the PERSONAL option.

1 **Press MENU.**

2 **Press Δ+ or ∇– to move the cursor (▶) to VIDEO CONTROL, and press ENTER.**

3 **Press Δ+ or ∇– to move the cursor (▶) to ADJUSTMENT, and press ENTER.**

4 **Press Δ+ or ∇– to move the cursor (▶) to the item you want to adjust, and press ENTER.**

```
 PERSONAL ADJUSTMENT
▶PICTURE ||||||||||||||||| 100
 COLOR   ||||||||||||||||   50
 BRIGHT  ||||||||||||||||   50
 HUE     ||||||||||||||||    0
 SHARP   |||||||||||||||    70
```

5 **Press Δ+ or ∇– to adjust the item, and press ENTER.**

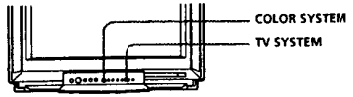
Item	Press Δ+ to	Press ∇– to
PICTURE	Increase picture contrast	Decrease picture contrast
COLOR	Increase color intensity	Decrease color intensity
BRIGHT	Brighten the picture	Darken the picture
HUE	Make skin tones become greenish	Make skin tones become reddish
SHARP	Sharpen the picture	Soften the picture

6 **To adjust other items, repeat steps 4 and 5.**

7 **Press MENU to return to the normal screen.**

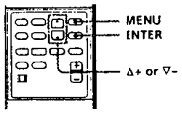
Note
- You can adjust HUE for NTSC system only.

If the color of the picture is abnormal
When receiving programs through the Ψ terminal: Press TV SYSTEM or COLOR SYSTEM until the color becomes normal.



Note
- Normally set COLOR SYSTEM to AUTO.

1-8. ADJUSTING THE SOUND



1 **Press MENU.**

```
▶VIDEO CONTROL
 AUDIO CONTROL
 SET UP
 LANGUAGE
 DEMO
```

2 **Press Δ+ or ∇– to move the cursor (▶) to AUDIO CONTROL.**

```
 VIDEO CONTROL
▶AUDIO CONTROL
 SET UP
 LANGUAGE
 DEMO
```

3 **Press ENTER.**

```
 AUDIO CONTROL
▶■MUSIC
  NEWS
  STANDARD
  PERSONAL
    ADJUSTMENT
```

4 **Press Δ+ or ∇– to select the sound that you want, and press ENTER.**

Select	To
MUSIC	Listen to music programs.
NEWS	Listen to news programs. A person's voice can be heard clearly.
STANDARD	Listen to sound other than music or news.
PERSONAL	Listen to the sound that is adjusted using ADJUSTMENT.
ADJUSTMENT	Make specific settings. See "Adjusting the sound precisely."

5 **Press MENU to return to the normal screen.**

Adjusting the sound precisely

You can adjust the sound precisely with the ADJUSTMENT option. The adjusted settings are stored in the PERSONAL option.

1 **Press MENU.**

2 **Press △+ or ▽- to move the cursor (▶) to AUDIO CONTROL, and press ENTER.**

3 **Press △+ or ▽- to move the cursor (▶) to ADJUSTMENT, and press ENTER.**

4 **Press △+ or ▽- to move the cursor (▶) to the item you want to adjust, and press ENTER.**

5 **Press △+ or ▽- to adjust the item, and press ENTER.**

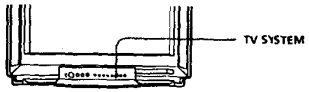
Item	Press △+ to	Press ▽- to
BASS	Increase the bass sound	Decrease the bass sound
TREBLE	Increase the treble sound	Decrease the treble sound
BALANCE	Increase the volume of right speaker	Increase the volume of left speaker

6 **To adjust other items, repeat steps 4 and 5.**

7 **Press MENU to return to the normal screen.**

If the sound is distorted or noisy

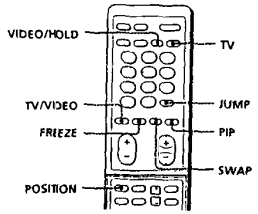
When receiving programs through the 'I' terminal:
Press TV SYSTEM until the sound becomes clear.



1-9. WATCHING TWO PICTURES SIMULTANEOUSLY

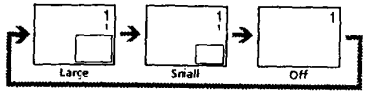
■ *KV-K29CF1 only*

With this function you can display a Picture In Picture (PIP) screen (small picture) within the main picture of a TV program or a video input.



Displaying PIP

Press PIP.



The channels are displayed as follows:
Main screen: green
PIP screen: white

Selecting a TV program or video in the main screen

To select a TV program, press TV and select the channel.
To select a video, press VIDEO/HOLD to select a video input.

Selecting a TV program or video in the PIP screen

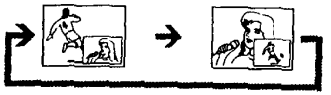
To select a TV program, press TV/VIDEO to select TV then select the channel.
To select a video, press TV/VIDEO to select a video input.

Note

- You can display different TV programs simultaneously using the VCR's built-in tuner.

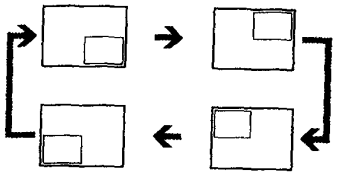
Swapping pictures between the main and PIP screens

Press SWAP.



Changing the position of the PIP screen

Press POSITION.



Freezing the PIP screen

Press FREEZE.

To restore the normal picture, press FREEZE again.

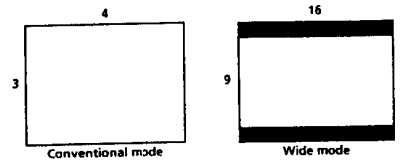
Notes

- When you display a VCR picture on the PIP screen at a speed other than normal speed, the picture may be noisy depending on the VCR. The picture can be improved by selecting the smaller size of the PIP screen.
- If you display different color systems (PAL, PAL 60, SECAM, NTSC) on the main screen and the PIP screen, the size of the PIP screen may be different and the PIP picture may be noisy. This is not caused by the malfunction of the TV.

1-10. CUSTOMIZING THE TV (SET UP)

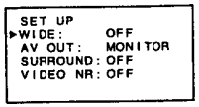
Setting wide mode

When receiving the signal conforming to wide mode (S1-Video signal), you can change the size of the picture on the screen.



1 Press MENU.

2 Press Δ+ or ∇– to select SET UP, and press ENTER.



3 Press Δ+ or ∇– to select WIDE, and press ENTER.

4 Press Δ+ or ∇– to select the wide mode to suit the size of the picture you want to display on the TV screen.

Select	To
ON	Display the picture on the screen in wide mode
AUTO	Display the picture on the screen in wide mode automatically when receiving the S1-Video signal through the S1-Video input jack
OFF	Display the picture on the screen in conventional size

Note

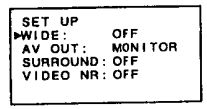
- When the picture is in wide mode, he bright lines which are used for adjusting the CRT at optimum level appear at the top of the screen.

Using the AV OUT (advanced rec-out) terminal

You can select the output signal from the MON/TV OUT jacks at the rear of the TV :o the TV signal or the signal of the picture you are watching as a monitor.

1 Press MENU.

2 Press Δ+ or ∇– to select SET UP, and press ENTER.



3 Press Δ+ or ∇– to select AV OUT, and press ENTER.

4 Press Δ+ or ∇– to select the output signal, and press ENTER.

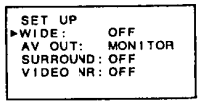
Select	To
TV	Output the TV signal.
MONITOR	Output the signal of the picture you are watching as a monitor.

Selecting the surround sound

You can enjoy a surround sound effect that is like being in a music hall when receiving stereo signals.

1 Press MENU.

2 Press Δ+ or ∇– to select SET UP, and press ENTER.



3 Press Δ+ or ∇– to select SURROUND, and press ENTER.

4 Press Δ+ or ∇– to turn the surround sound on or off, and press ENTER.

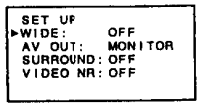
Select	To
ON	Listen to surround sound that is effective for stereo signals
SPACE	Listen to surround sound that is effective for monaural signals
OFF	Turn off surround sound

Reducing the noise of the picture

You can reduce the noise level of the picture when the TV receives a weak signal or when you play a videotape that is in poor condition.

1 Press MENU.

2 Press Δ+ or ∇– to select SET UP, and press ENTER.



3 Press Δ+ or ∇– to select VIDEO NR, and press ENTER.

4 Press Δ+ or ∇– to turn the noise reduction on or off, and press ENTER.

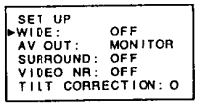
Adjusting the tilt of the picture

■ *KV-K29SN21/K29CF1 only*

You can adjust the tilt of the picture if it is not aligned to the TV screen. This happens when you set the TV in the direction with effect of the earth's magnetic fields.

1 Press MENU.

2 Press Δ+ or ∇– to select SET UP, and press ENTER.



3 Press Δ+ or ∇– to select TILT CORRECTION, and press ENTER.

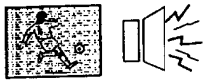
4 Press Δ+ or ∇– to select the most suitable value to align the picture position.

TILT CORRECTION : -3 ← –2 ← –1 ← 0 → +1 → +2 → +3
∇– Δ+

1-11. TROUBLESHOOTING

If you have any problem, read this manual again and check the countermeasures for each symptom listed below.
If the problem persists, contact your nearest authorized service center or dealer.

Snowy picture
Noisy sound



➡Check the antenna.
➡Check the antenna connection on the TV and on the wall.
➡Check the TV system setting.

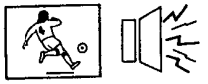
Dotted lines or stripes

➡This may be caused by local interference (e.g. cars, neon signs, hair dryers, etc.). Adjust the antenna for minimum interference.

Double images or "ghosts"

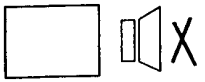
➡This may be caused by reflections from nearby mountains or buildings. A highly directional antenna may improve the picture.

Good picture
Noisy sound



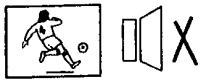
➡Check the TV SYSTEM setting.

No picture
No sound



➡Press MAIN POWER.
➡Press POWER.
➡Check the antenna connection.
➡Check the VCR connections.

Good picture
No sound



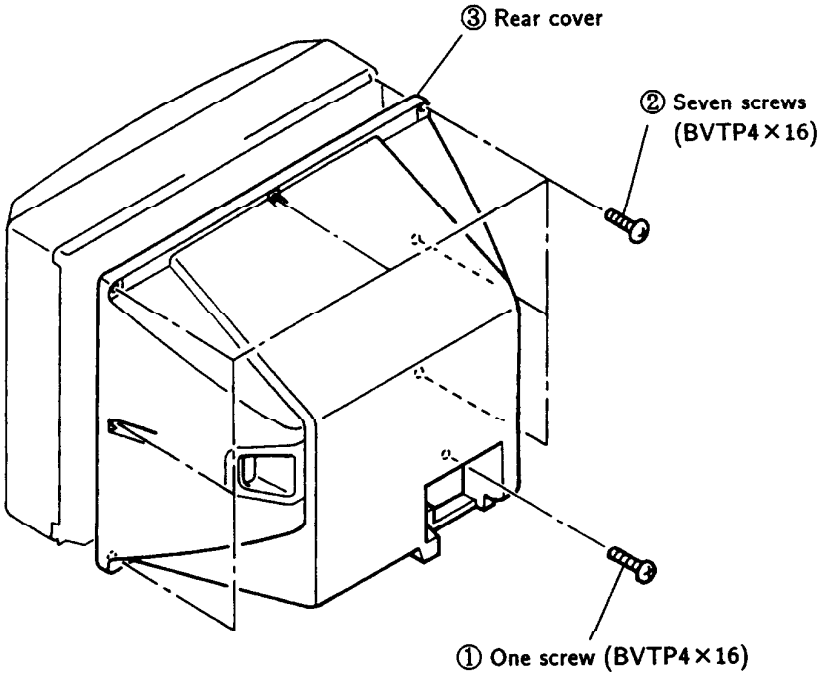
➡Press VOLUME +.
➡Press MUTING.
➡Press A/B/ENLARGE.

No color

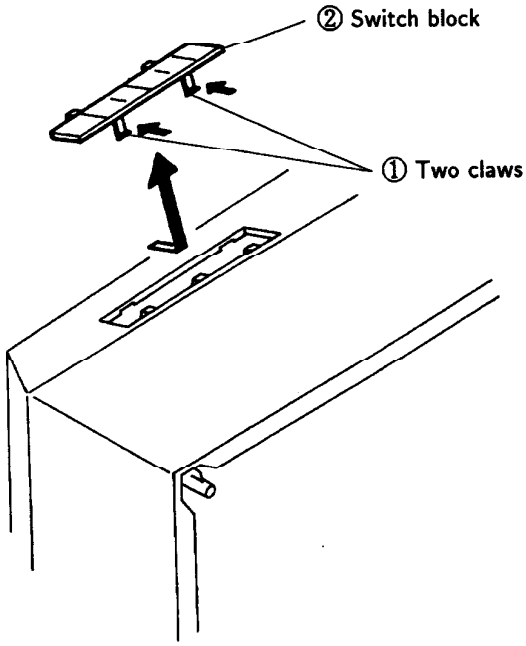
➡Adjust the COLOR level in the VIDEO CONTROL menu's ADJUSTMENT option.
➡Check the COLOR SYSTEM setting.

SECTION 2
DISASSEMBLY

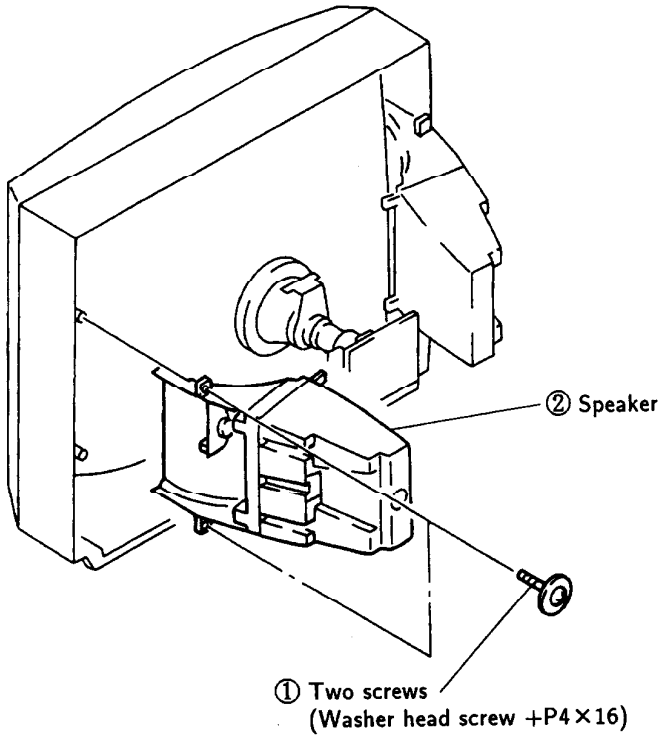
2-1. REAR COVER REMOVAL



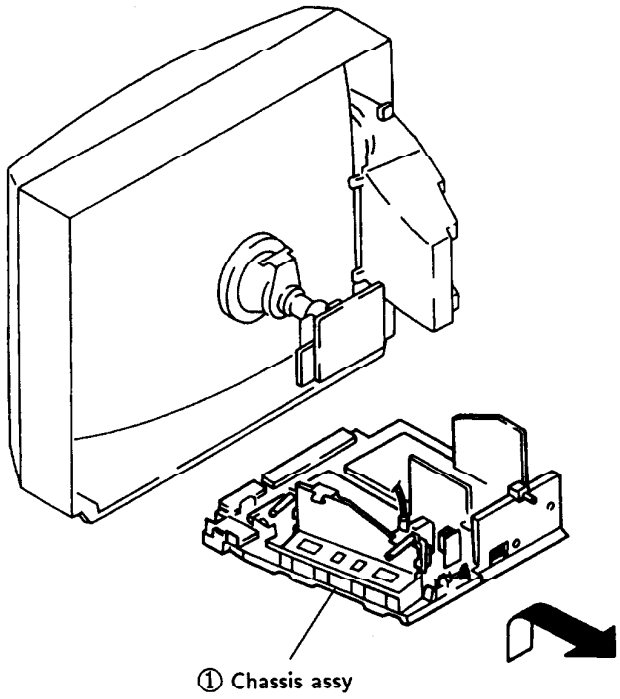
2-2. SWITCH BLOCK REMOVAL



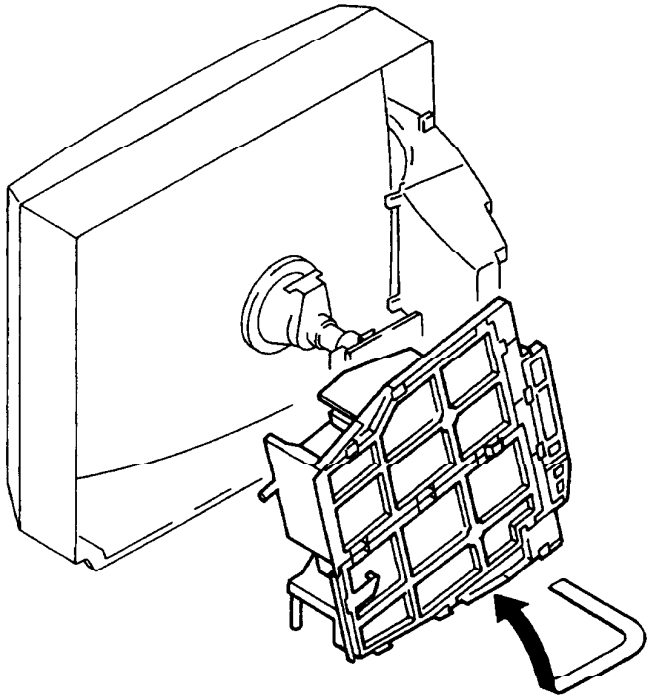
2-3. SPEAKER REMOVAL



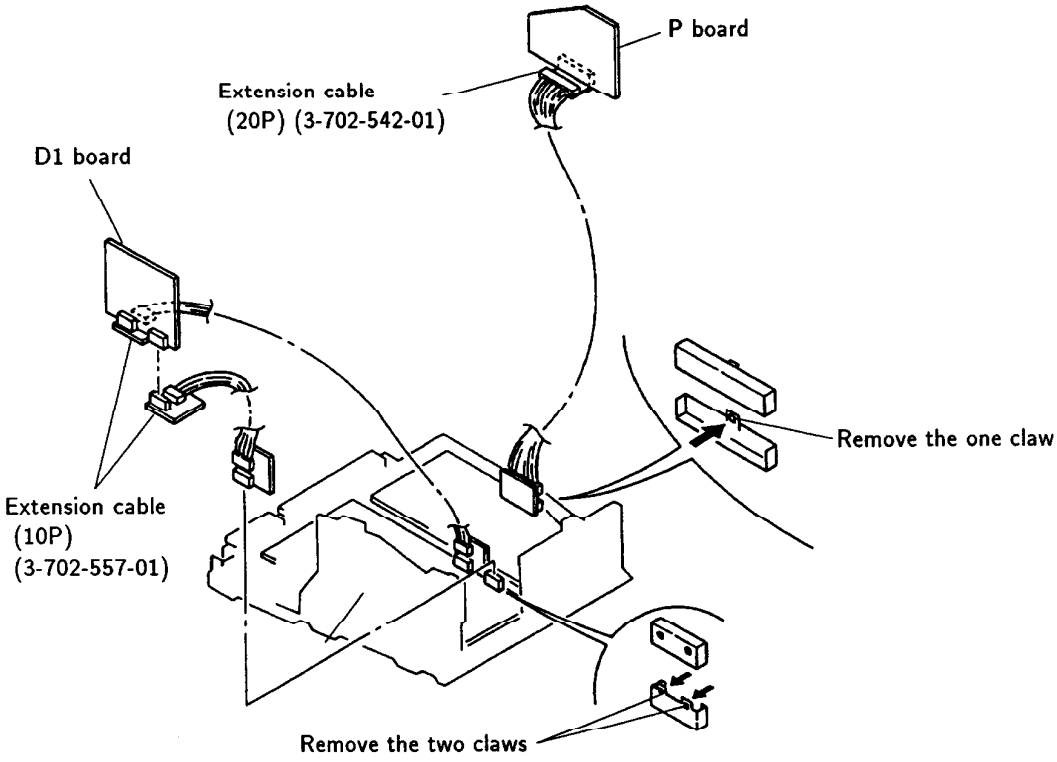
2-4. CHASSIS ASSY REMOVAL



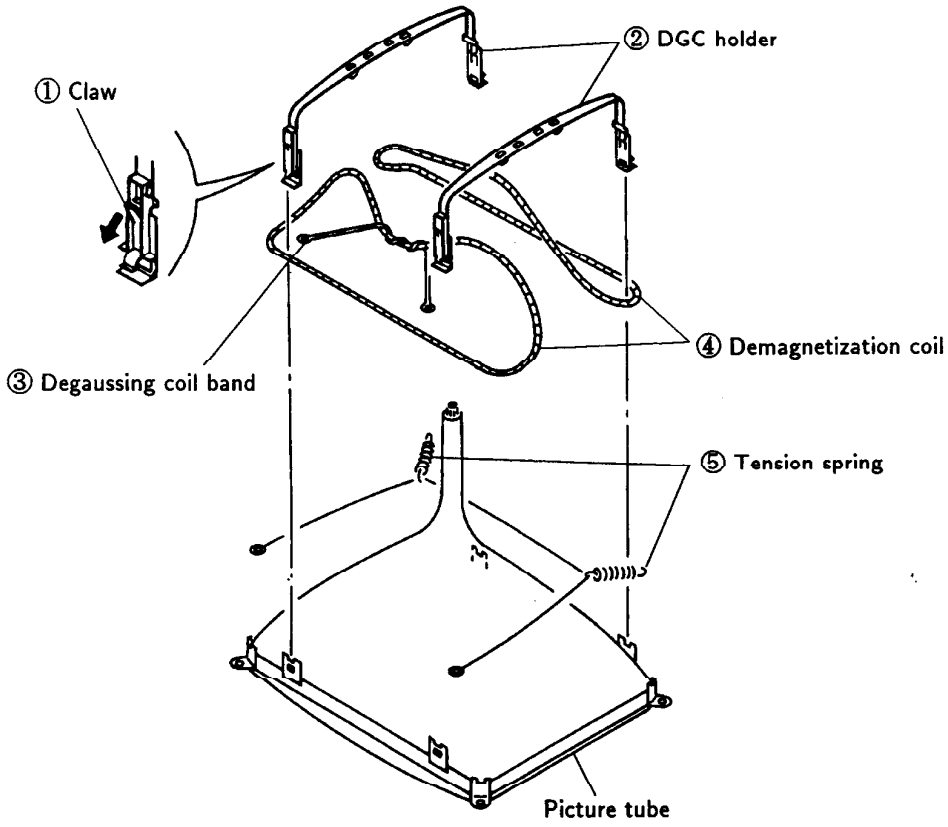
2-5. SERVICE POSITION



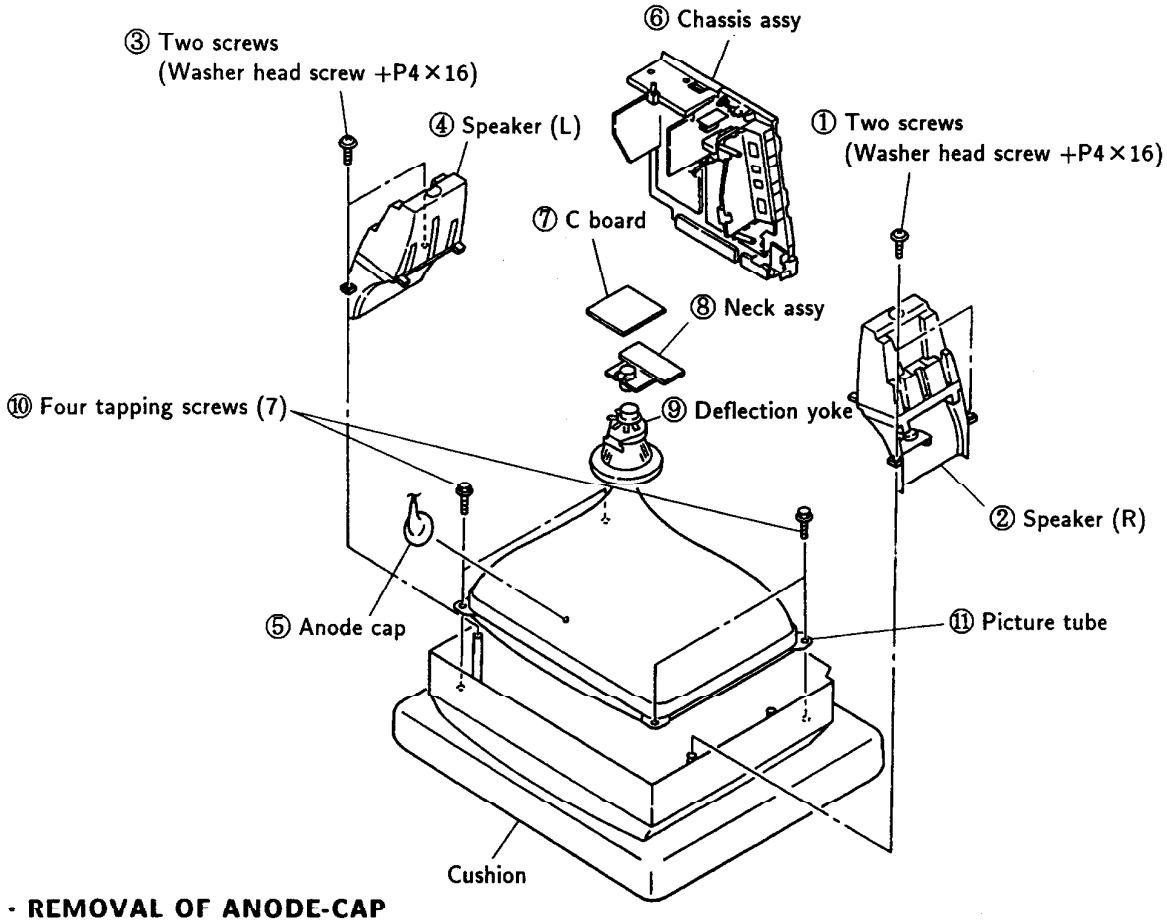
2-6. EXTENSION CABLE



2-7. DEMAGNETIZATION COIL REMOVAL



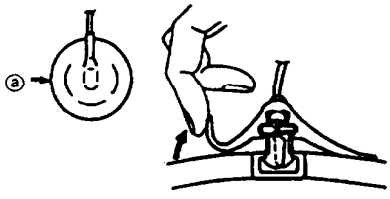
2-8. PICTURE TUBE REMOVAL



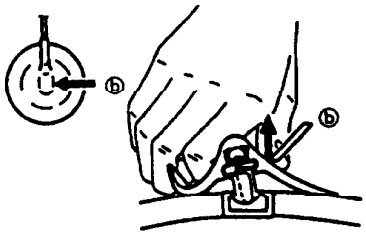
· REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

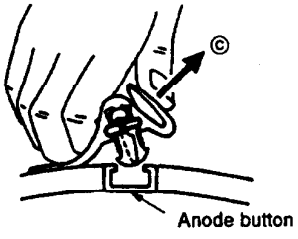
· REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



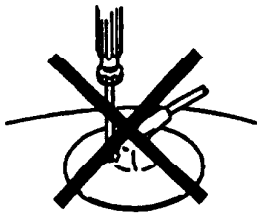
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

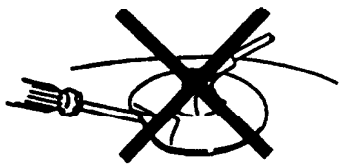
· HOW TO HANDLE AN ANODE-CAP

① Don't hurt the surface of anode-caps with sharp shaped material!

② Don't press the rubber hardly not to hurt inside of anode-caps!
A material fitting called as shatter-hook terminal is built in the rubber.

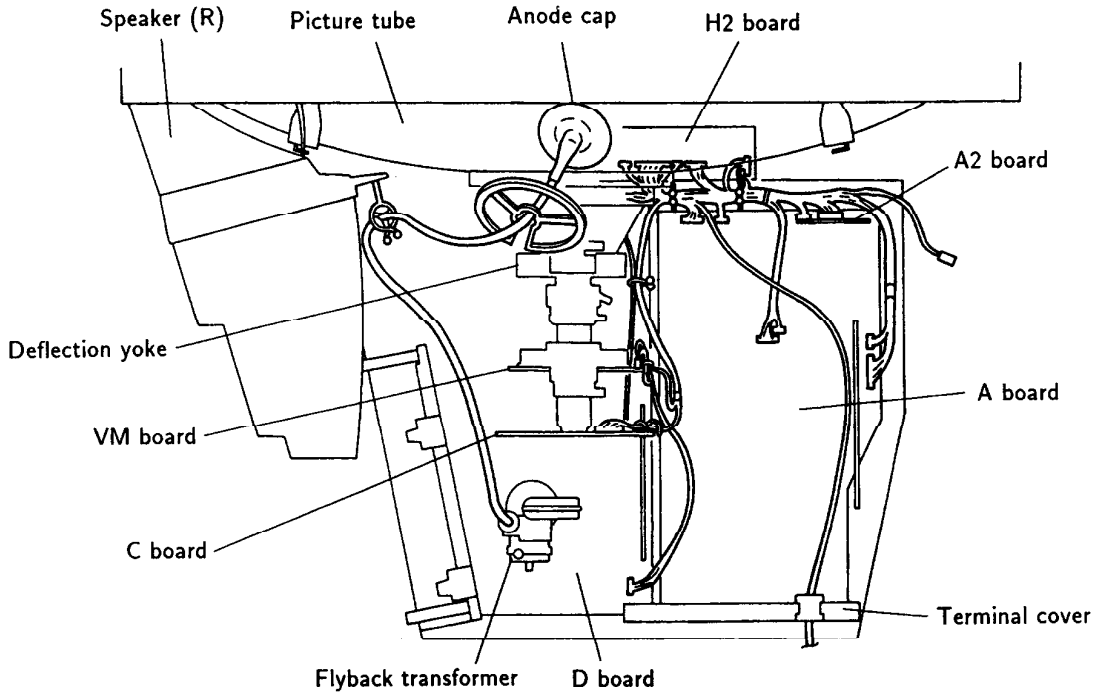
③ Don't turn the foot of rubber over hardly!
The shatter-hook terminal will stick out or hurt the rubber.



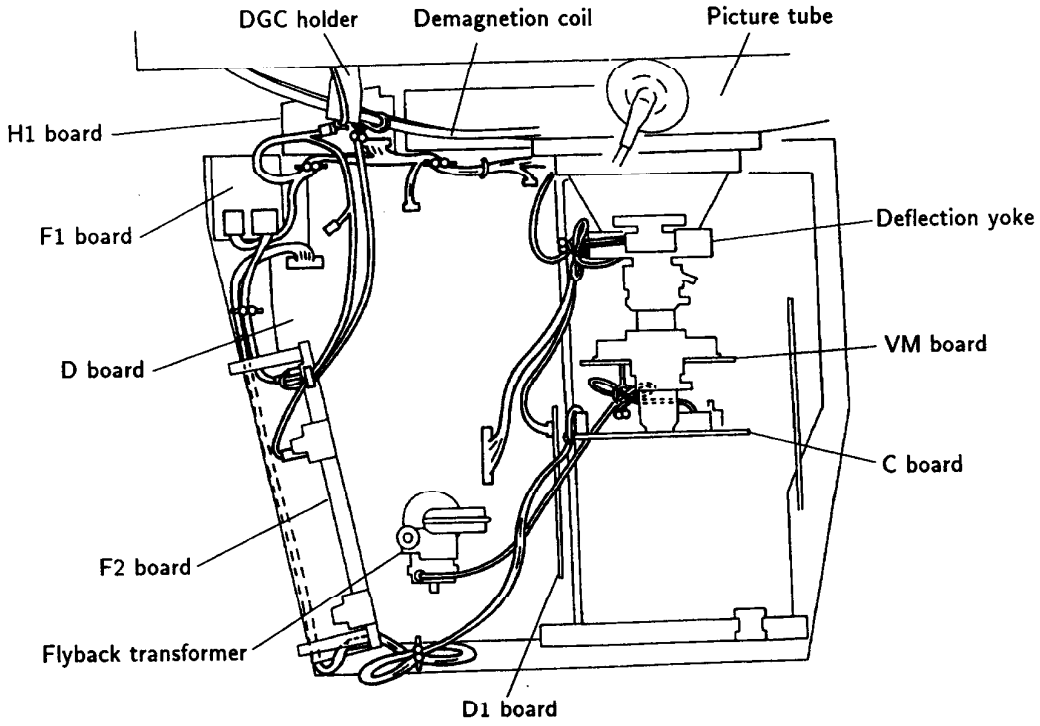


2-9. HARNESS LOCATION

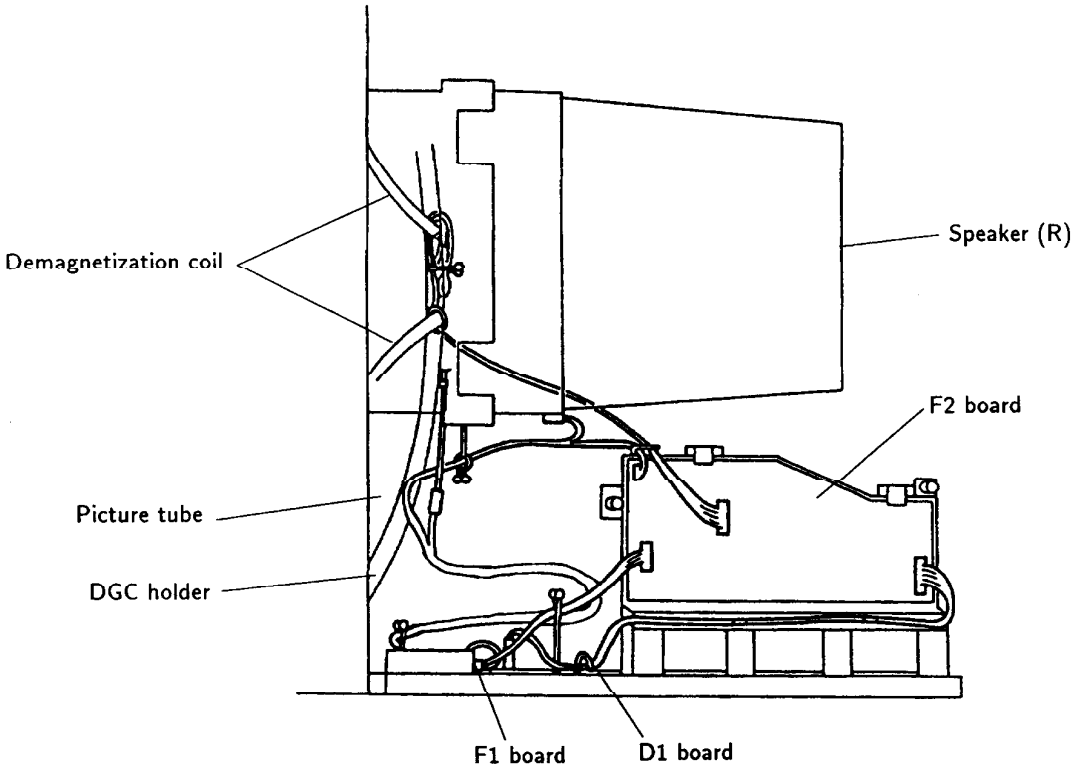
(1) TOP VIEW



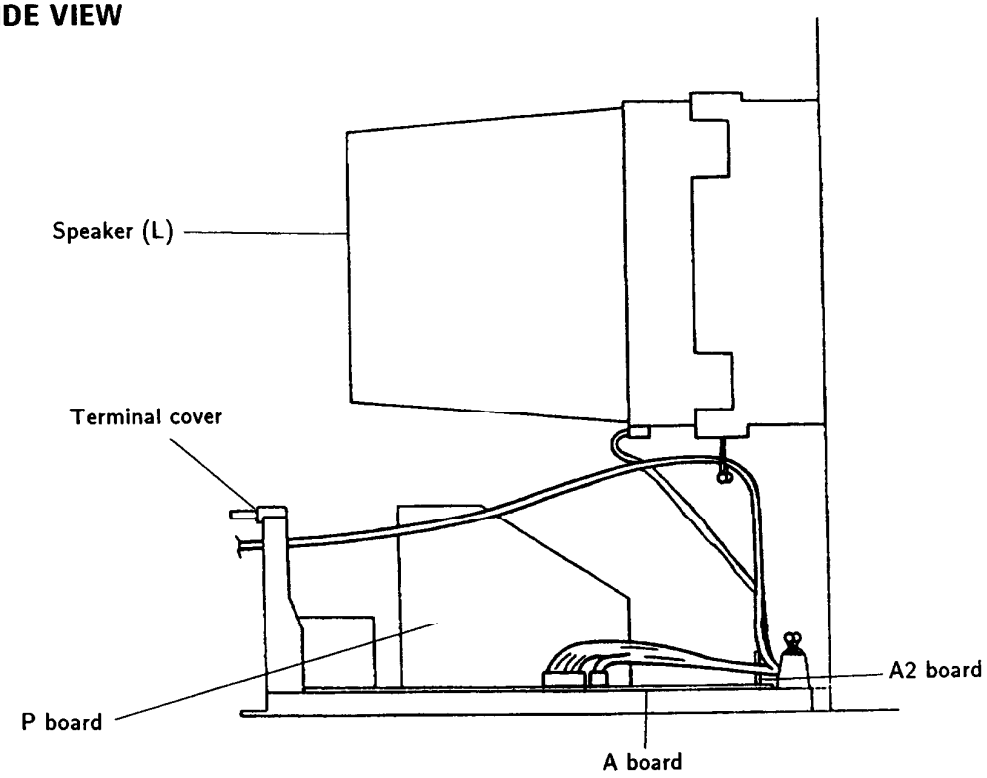
(2) TOP VIEW (LEFT)



(3) LEFT SIDE VIEW



(4) RIGHT SIDE VIEW



SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted :

PICTURE control . . . . . RESET
BRIGHTNESS control . . . . . center

Perform the adjustments in order as follows :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required.

1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope

Preparations :

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

1. Input the white signal with the pattern generator.
   Contrast
   Bightness } normal
2. Position neck ass'y as shown in Fig 3-2.
3. Set the pattern generator raster signal to red.
4. Move the deflection yoke to the rear and adjust with the purity control so that the red is at the center and the blue and the green take up equally sized areas on each side.
   (See Figures 3-1 through 3-3.)
5. Move the deflection yoke forward and adjust so that entire screen is red. (See Figure 3-1.)
6. Switch the raster signal to blue, then to green and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it.
   (See Figure 3-4.)

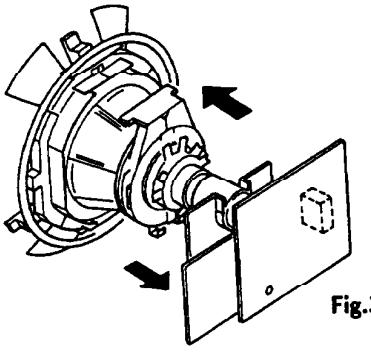


Fig.3-1

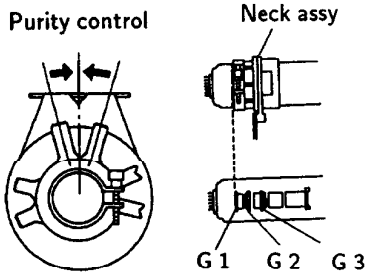


Fig.3-2

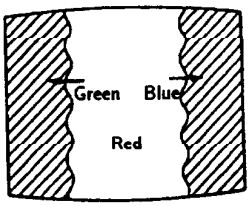


Fig.3-3

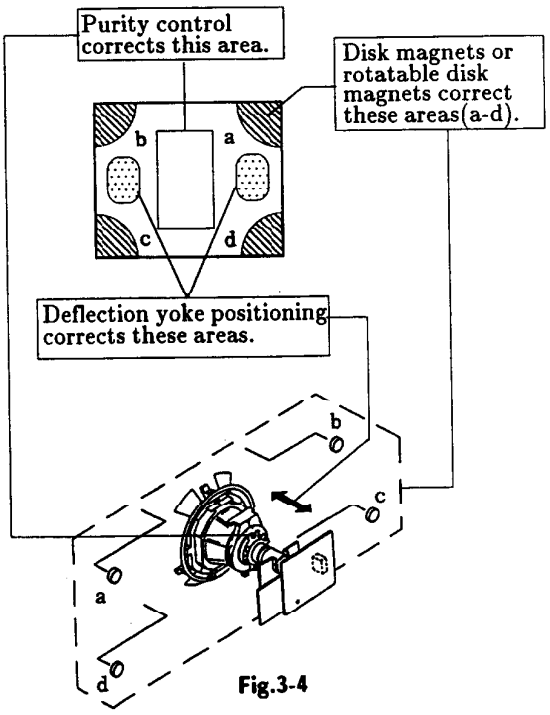


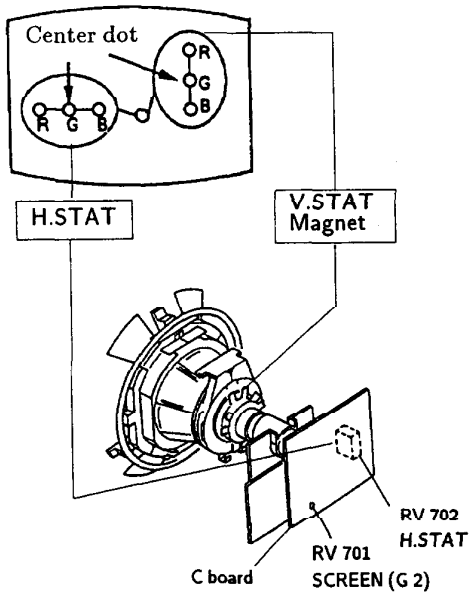
Fig.3-4

3-2. CONVERGENCE

Preparation :

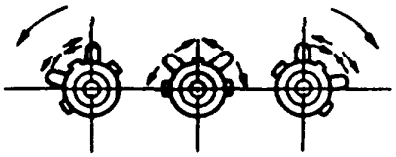
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

(1) **Horizontal and Vertical Static Convergence**

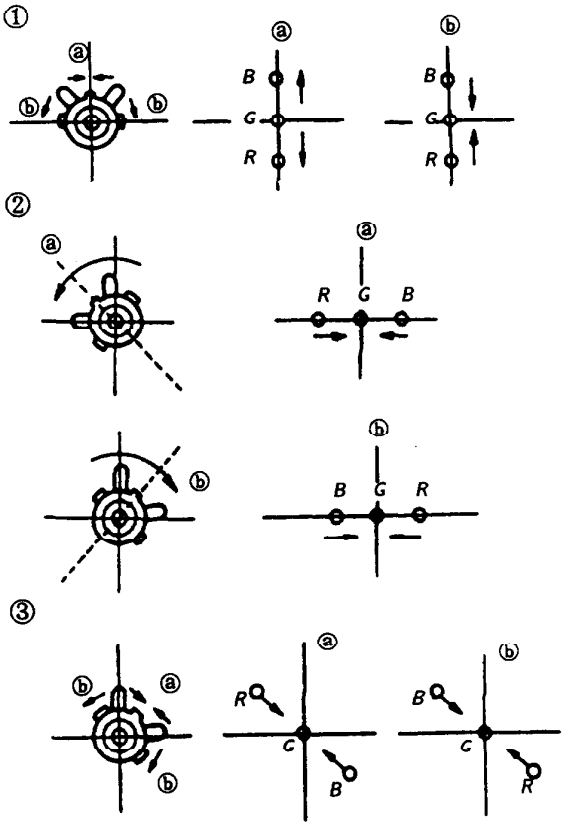


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V. STAT magnet in the manner given below.
   (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other)

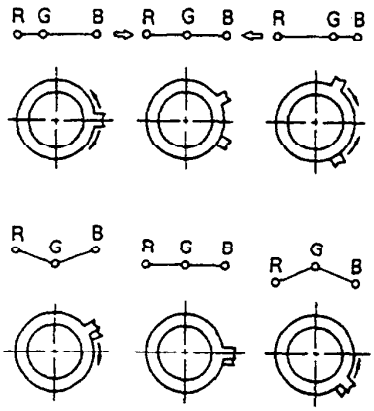
- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



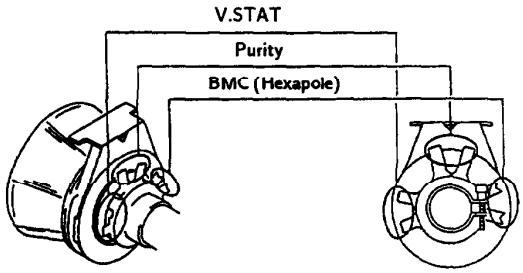
4. If the V.STAT magnet is moved in the direction of the ⓐ and ⓑ arrows, the red, green, and blue points move as shown below.



- Operation of BMC (Hexapole) Magnet



- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.
  Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).



• Y separation axis correction magnet adjustment

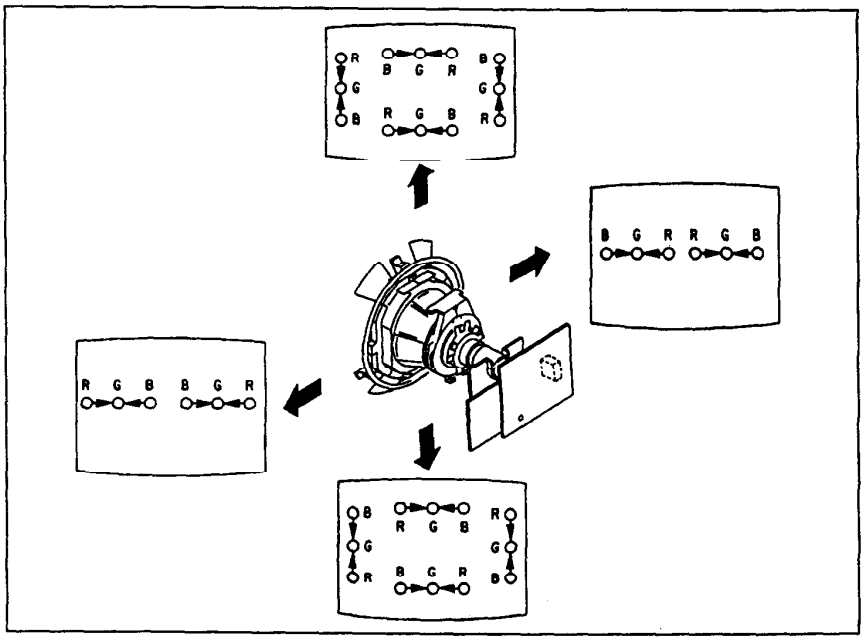
1. Receive the cross-hatch signal, and adjust [PIX] to "MIN" and [BRT] to "standard".
2. Adjust the deflection yoke to the upright condition when it hits the CRT.
3. Adjust so that the Y separation axis correction magnet on the neck assembly is symmetrical at the top and bottom (open state).
4. Return the deflection yoke to its original position.

(2) **Dynamic Convergence Adjustment**

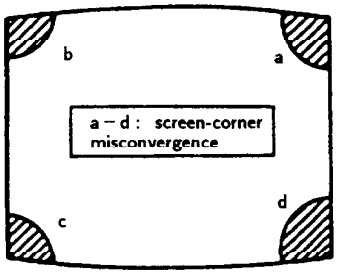
Preparations :

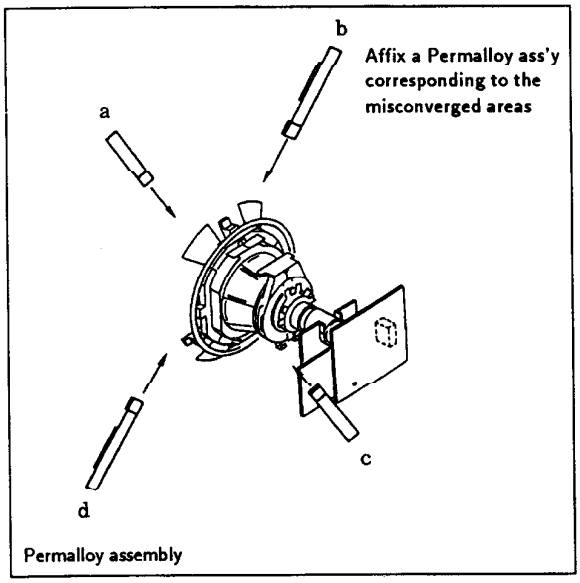
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.
3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the defelection yoke spacer.



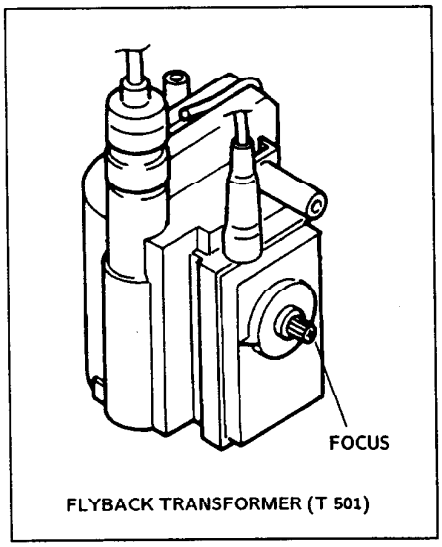
(3) Screen-corner Convergence





3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for a best focus.



a. AN ITEM OF ADJUSTMENT

Item number	Adjustment item	Standard DATA				Note
		50 Hz		60 Hz		
		Normal	Wide	Normal	Wide	
07	GDR	1F	1F	1F	1F	G Drive
08	BDR	1F	1F	1F	1F	B Drive
09	GCT	07	07	07	07	G CUT-OFF
0A	BCT	07	07	07	07	B CUT-OFF
05	SBR	1F	1F	1F	1F	SUB-BRIGHTNESS

b. METHOD OF CANCELLATION FROM SERVICE MODE

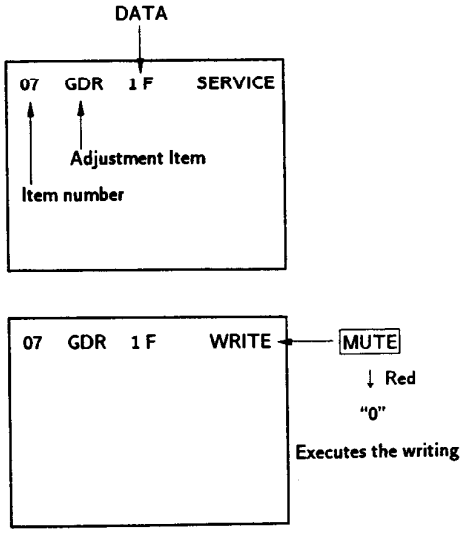
Set the standby condition (Press POWER button on the commander) in the next place, press POWER button again, hereupon it becomes TV mode.

c. METHOD OF WRITE FOR MEMORY

1) Set to Service Mode.
2) Press 1 (UP) and 4 (DOWN), select an item of adjustments.
3) Press MUTE button indicate WRITE (RED) on screen.
4) Press 0 button to write for memory.

d. MEMORY WRITE CONFIRMATION METHOD

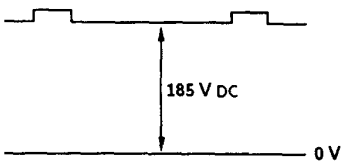
1) After adjustment, pull out the plug from AC outlet, and next place, plug in AC outlet again.
2) Turn the power switch ON and set to Service Mode.
3) Call the adjusted items again, confirm they were adjusted.



3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G 2 (SCREEN) ADJUSTMENT(RV 701)

1) Set the PICTURE and BRIGHTNESS to normal.
2) Put to VIDEO input mode without signals.
3) Set to Service Mode.
4) Change BLU data of the item number "57" from "01" to "00". (To turn off Blue Black.)
5) Press [MUTE], and [0] to write the data in the memory.
6) Connect R, G, and B of the C board cathode to the oscilloscope.
7) Adjust G2 (RV701) volume to the value below.



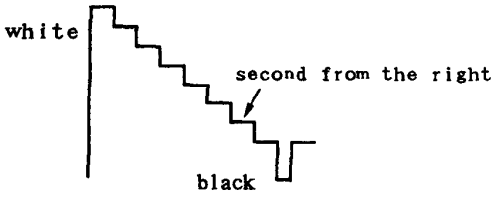
8) Re-set BLU data of the item number "57" from "00" back to "01".
9) Press [MUTE], and [0] to write the data in the memory.

2. WHITE BALANCE ADJUSTMENTS

1) Set to service mode.
2) Input an entire white signal.
3) Set the PICTURE to minimum.
4) Select SBR with [1] and [4], and then set the level to minimum with [3] and [6].
5) Select GCT and BCT with [1] and [4]. And adjust the level with [3] and [6] for the best white balance.
6) Set the PICTURE to maximum.
7) Select GDR and BDR with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
8) Write into the memory by pressing [MUTE] → then [0].

3. SUB BRIGHT ADJUSTMENT

1) Set to service mode.
2) Input a staircase signal of black and white from the pattern generator.
3) BRIGHTNESS ··· RESET
   PICTURE ····· minimum
4) Select SBR with [1] and [4], and adjust SBR level with [3] and [6] so that the stripe second from the right is dimly lit.



SECTION 4
SELF DIAGNOSIS FUNCTION

If no acknowledgement is returned from a device which is turned "ON", the device has a problem.
In this case, one of the LED's responding to the problem device will flicker defined number of times.

Flickering is operated by lighting the LED's for 60ms and turning them off for 600ms.

The flickering frequency responding to each failed device is shown below.

Device	NONVOLATILE MEMORY	AV SWITCH (CXA1545S)	MAIN Y/C (TDA9145)	RGB JUNGLE (CXA1587)	DY DSP (CXD2018)	SURROUND PROCESSOR (TA8776N)
Flickering Frequency	1	2	3	4	5	6

All the devices are checked one after another from the left on the table.
If an error is found, the responding LED will start flickering.
So, if more than 2 devices are failed, the one on the left side will start flickering at first.

SECTION 5
CIRCUIT ADJUSTMENTS

5-1. ADJUSTMENTS WITH COMMANDER

Servise adjustments are made with the RM-845 that comes with this unit.

Entering service mode

With the unit on standby

↓

"DISPLAY"

↓

"5"

↓

"VOL (+)"

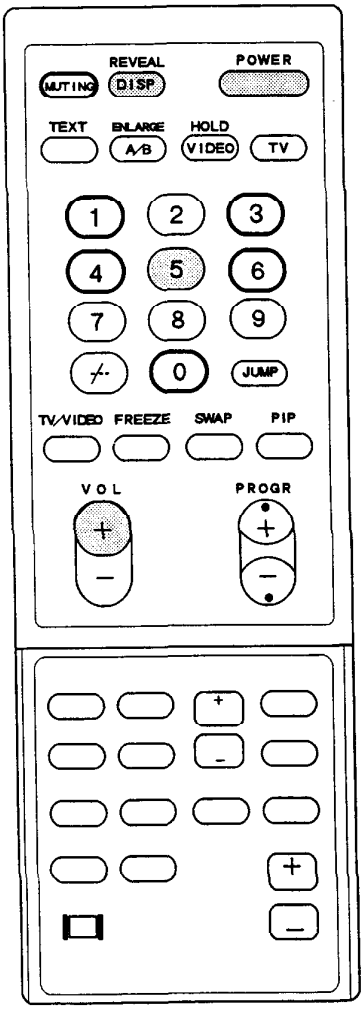
↓

"POWER"

This operation sequence puts the unit into servise mode.

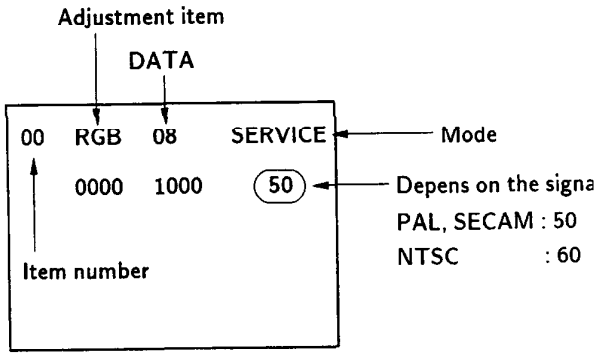
"1", "4"	Raise/lower the service item number
"3", "6"	Raise/lower the data
"MUTE"	Writes
"0"	Executes the writing

"7", "0"	The data all becomes the values in memory
"8", "0"	User control all goes to the standard state
"5", "0"	Service data initialization (Besure not to use usually.)
"2", "0"	Write 50Hz adjustment data to 60Hz, or in opposition. (Be sure not to use usually.)



RM-845 P

The screen display is :



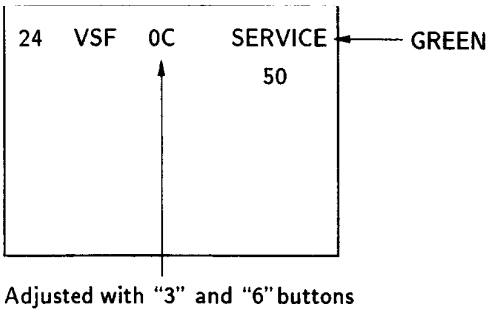
"1", "4"	Select the adjustment item.
↓	
"3", "6"	Raise/lower the data.
↓	
"MUTE"	Writes
↓	
"0"	Executes the writing.

5-2. ADJUSTMENT METHOD

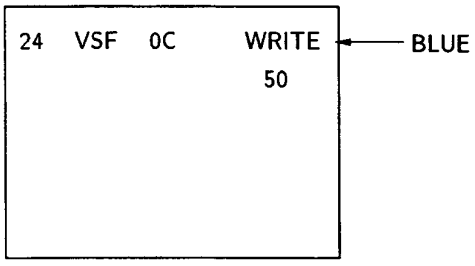
Item Number 24

This explanation uses V-SHFT as an example.

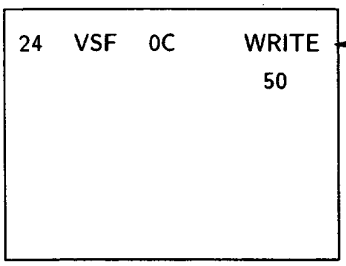
1. Select 24 V-SHFT with the "1" and "4" buttons.
2. Raise/lower the data with the "3" and "6" buttons.
3. Select the optimum state. (The standard is for 0F PAL reception.)
4. Write with the MUTE button. (The display changes to blue WRITE.)
5. Execute the writing with the "0" button. (The WRITE display changes briefly to red.)



Adjusted with "3" and "6" buttons



Written with "MUTE"



The WRITE display changes briefly to red, then the display returns to a green SERVICE.

Write excuted with "0"

Use the same method for Items Number 00-5E. Use "1" and "4" to select the adjustment item, use "3" and "6" to adjust, write with "MUTE", then execute the write with "0".

Note : In "WRITE", the data of all items are wrote together to memory.

- H-FRE can be adjusted automatically. Feed a standard signal and input "9", the automatic adjustment is executed.
- As for V-FREQ, by searching the bolded screen V range with adjusting data.

Note : In item 02 50Hz, or item 03 60Hz, it operates normally in spite of the 50Hz or the 60Hz of the input signal. Therefore be sure to adjust data according to the input signal.

Item number	Adjustment Item	Data range	Standard DATA				Note	(Device)
			50 Hz		60 Hz			
			Normal	Wide	Normal	Wide		
00	RGB	00~0F	07	07	07	07	RGB PICTURE	(CXA 1587 S)
01	SCN	00~0F	08	06	08	06	SUB-Contrast	(CXA 1587 S)
02	VM	00~03	01	01	01	01	VM Level	(CXA 1587 S)
03	SCL	00~0F	08	07	08	07	SUB-COLOR	(CXA 1587 S)
04	SHU	00~0F	08	08	08	08	SUB-HUE	(CXA 1587 S)
05	SBR	00~3F	1F	1F	1F	1F	SUB-BRIGHTNESS	(CXA 1587 S)
06	ABL	00~03	03	03	02	02	ABL Mode	(CXA 1587 S)
07	GDR	00~3F	1F	1F	1F	1F	G Drive	(CXA 1587 S)
08	BDR	00~3F	1F	1F	1F	1F	B Drive	(CXA 1587 S)
09	GCT	00~0F	07	07	07	07	G CUT-OFF	(CXA 1587 S)
0A	BCT	00~0F	07	07	07	07	B CUT-OFF	(CXA 1587 S)
0B	AKR	00~FF	7F	7F	7F	7F	AKB OFF R CUT-OFF	(CXA 1587 S)
0C	AKG	00~FF	7F	7F	7F	7F	AKB OFF G CUT-OFF	(CXA 1587 S)
0D	AKB	00~FF	7F	7F	7F	7F	AKB OFF B CUT-OFF	(CXA 1587 S)
0E	GMA	00~0F	0C	0C	0C	0C	γ control	(CXA 1587 S)
0F	DCT	00~03	00	00	00	00	DC TRAN	(CXA 1587 S)
10	DPI	00~03	03	03	03	03	D-PIC	(CXA 1587 S)
11	YFI	00~3F	22	22	22	22	Y Filter Adjust	(CXA 1587 S)
12	SHL	00~01	01	01	01	01	SHP-LIM	(CXA 1587 S)
13	YDL	00~0F	07	07	07	07	Y Delay Time	(CXA 1587 S)
14	YSW	00~03	01	01	01	01	Y-SW OUT	(CXA 1587 S)
15	HSH	00~3F	24	24	28	28	H Shift	(CXA 1587 S)
16	POV	00~0F	08	08	08	08	Pre-Over	(CXA 1587 S)
17	SHF	00~03	02	02	02	02	SHP-F 0	(CXA 1587 S)
18	SSH	00~03	01	01	02	02	SUB-Sharpness	(CXA 1587 S)
19	RMT	00~01	00	00	00	00	R-Mute	(CXA 1587 S)
1A	GMT	00~01	00	00	00	00	G-Mute	(CXA 1587 S)
1B	BMT	00~01	00	00	00	00	B-Mute	(CXA 1587 S)
1C	AG 1	00~01	00	00	00	00	Aging 1 (White)	(CXA 1587 S)
1D	AKF	00~01	00	00	00	00	AKB-OFF	(CXA 1587 S)
1E	SMD	00~01	00	00	00	00	Scan Mode	(CXA 1587 S)
1F	VEX	00~01	00	00	00	00	V-Extension	(CXA 1587 S)
20	AFC	00~03	03	03	03	03	AFC Loop Gain	(CXA 1587 S)
21	AFF	00~01	00	00	00	00	AFC-OFF	(CXA 1587 S)
22	RFP	00~01	00	00	00	00	Reference Position	(CXA 1587 S)
23	VSZ	00~3F	1E	1E	1A	1A	V-Size	(CXD 2018 Q)
24	VSF	00~3F	2E	2E	32	32	V-Shift	(CXD 2018 Q)
25	SCR	00~F	08	08	08	08	S-Correction	(CXD 2018 Q)
26	VLN	00~F	08	08	08	08	V-Linearity	(CXD 2018 Q)
27	HSZ	00~3F	0C	0C	0 E	0 E	H-Size	(CXD 2018 Q)
28	PAP	00~3F	2E	2E	2E	2E	Pin-Amp	(CXD 2018 Q)
29	TLT	00~0F	09	09	09	09	Tilt	(CXD 2018 Q)
2A	UCP	00~0F	0A	0A	0A	0A	Upper Corner Pin	(CXD 2018 Q)
2B	LCP	00~0F	0C	0C	0C	0C	Lower Corner Pin	(CXD 2018 Q)
2C	VBW	00~0F	08	08	08	08	V-Bow	(CXD 2018 Q)
2D	VAG	00~0F	08	08	08	08	V-Angle	(CXD 2018 Q)
2E	HVV	00~07	04	04	07	07	HV-Comp-V	(CXD 2018 Q)
2F	HVH	00~07	00	00	00	00	HV-Comp-H	(CXD 2018 Q)
30	FCL	00~07	03	03	03	03	Frame Color	(SDA 9188)
31	FON	00~01	01	01	01	01	Frame ON	(SDA 9188)
32	DLY	00~07	00	00	00	00	Select Delay LL 3 P	(SDA 9188)
33	P-V	00~0F	07	07	07	07	V read delay	(SDA 9188)
34	PVS	00~07	04	04	04	04	PIP-V offset	(SDA 9188)
35	P-H	00~3F	0A	0A	07	07	H read delay	(SDA 9188)
36	PHS	00~0F	07	07	03	03	PIP-H offset	(SDA 9188)
37	CTR	00~0 F	0A	0A	0A	0A	Contrast	(SDA 9188)
38	FWV	00~01	01	01	01	01	Frame Width V	(SDA 9188)
39	FWH	00~01	01	01	01	01	Frame Width H	(SDA 9188)
3A	DVI	00~0F	07	07	07	07	Setting Delay VSI	(SDA 9188)
3B	DVP	00~0 F	0F	0F	0F	0F	Delay VSP Pulse	(SDA 9188)
3C	BRT	00~0 F	0C	0C	0C	0C	Frame BRIGHT Data	(SDA 9188)

Item number	Adjustment Item	Data range	Standard DATA				Note	(Device)
			50 Hz		60 Hz			
			Normal	Wide	Normal	Wide		
3D	LEV	00~0 F	00	00	00	00	Level Adjust	(TDA 9840)
3E	STR	00~3 F	02	02	02	02	Stereo Adjust	(TDA 9840)
3F	AXG	00~01	00	00	00	00	AUX Output Gain	(TDA 8204)
40	AXM	00~01	00	00	00	00	AUX Output Mute	(TDA 8204)
41	VCX	00~01	00	00	00	00	VCXO free run	(TDA 8204)
42	ERC	00~01	00	00	00	00	Error count Time	(TDA 8204)
43	MXE	00~01	00	00	00	00	MAX. allowed Error	(TDA 8204)
44	SRO	00~01	00	00	00	00	SRO set Bit	(TDA 8204)
45	ATO	00~00	01	01	01	01	Auto Selection	(TDA 8204)
46	SYS	00~01	00	00	00	00	System select	(TDA 8204)
47	FSW	00~03	00	00	00	00	Force Switch	(TDA 8204)
48	SYN	00~01	01	01	01	01	Synthesizer	(TDA 8204)
49	VCR	00~01	00	00	00	00	VCC Reference Sw	(CXP 1315 P)
4A	SEL	00~FF	5F	5F	5 F	5F	Separation Level	(CXP 1315 P)
4B	DCS	00~3F						
4C	UYB	00~3F						
4D	LYB	00~3F						
4E	HAP	00~3F						
4F	HTL	00~3F						
50	UCB	00~3F						
51	UTL	00~3F						
52	LCB	00~3F						
53	LTL	00~3F						
54	TXP	00~0 F	05	05	05	05	Teletext Picture	(Teletext μ-Con)
55	ODL	00~FF	10	10	10	10	Power ON Delay	(CXP 80424)
56	OSH	00~3 F	0F	0F	0F	0F	OSD Position H	(CXP 80424)
57	BLU	00~01	01	01	01	01	Blue Back Feature	(CXP 80424)
58	ROC	00~0F	04	07	07	07	Center of Rotation	(CXP 80424)
59	ROS	00~07	07	03	03	03	Step Width	(CXP 80424)
5A	HTR	00~3 F	1 F	1 F	1 F	1 F	H Trapezoid	(CXP 80424)
5B	MUT	00~01	01	01	01	01	No Sync. Mute	(CXP 80424)
5C	DID	00~01	00	00	00	00	Disable Degauss	(CXP 80424)
5D	OP0	00~FF	*1	*1	*1	*1	Option 0	(CXP 80424)
5E	OP1	00~0F	*2	*2	*2	*2	Option 1	(CXP 80424)

*1 Input data are different according to models.

Item	CCD	Text	PinP	Jpn	NICM	W. G	MTS	Comb
KV-K29CF1	0	0	1	0	0	0	0	1

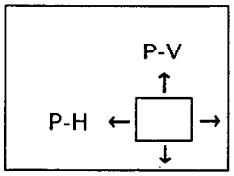
*2 Input data are different according to models.

Item	—	—	—	—	Mono	Tilt	Dcon	Chin
KV-K29CF1	0	0	0	0	0	1	0	1

5-3. DISPLAY POSITION ADJUSTMENT

Item Numbers 33-36

33 P-V Pin-P vertical position correction
34 PVS Pin-P vertical offset
35 P-H Pin-P horizontal position correction
36 PHS horizontal offset



- When pressing PIP "POSITION" key in the service mode, "POSITION" turns round and round automatically.

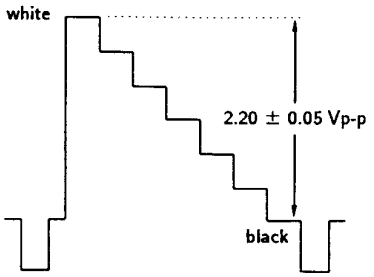
Item Numbers 33-36 are set to the standard values.

54 TXP Teletext picture
Corrects the brightness for when teletext is received.
Standard value is 05.

5-4. A BOARD ADJUSTMENT

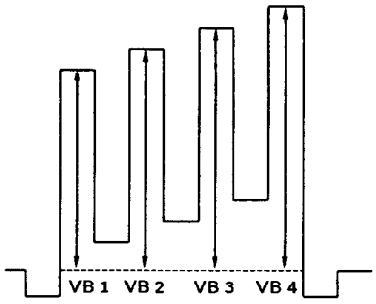
SUB CONTRAST ADJUSTMENT (SCN)

1. Receive a PAL color-bar 10 ith 100 IRS.
2. Put DC 4.0 V to the pin ㉖ (ABL IN) of IC 304, A board. Set the PICTURE 100%, BRIGHT 50% and COLOR MIN.
3. Connect an oscilloscope to the pin ⑥ (R OUT) of CN 118, A board.
4. Set to Service Mode and select 01 (SIN) with [1] and [4] of the commander to adjust to 2.2±0.05 V.
5. Press [MUTING] → [0] of the commander to write the data.
6. Receive a NTSC color-bar and adjust as step 4 and 5.
7. Receive the PAL color-bar to set to WIDE mode by pressing [MENU] Then set to Servise Mode and adjust 01 (SCN) to write the 2 step dropped value of the step 4.
8. Receive the NTSC color-bar and adjust as step 7.



SUB COLOR ADJUSTMENT (SCL)

1. Receive a PAL color-bar.
2. Connect an oscilloscope to the pin ⑦ (B OUT) of CN118, A board. Set the PICTURE 100%, COLOR 38%, BRIGHT 50%.
3. Set to Service Mode and select 03 (SCL) with [1] and [4] of the commander to adjust to VB2=VB3=VB4 with [3] and [6].
4. Press [MUTING] → [0] of the commander to write the data.
5. Adjust as step 4 and 5 by receiving NTSC color bar.

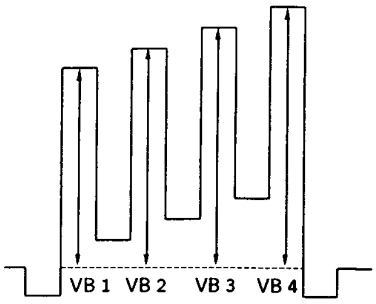


VB 2=VB 3=VB 4

6. Receive the PAL color-bar to set to WIDE mode by pressing [MENU] Then set to Servise Mode and adjust 03 (SCL) to write the 1 step dropped value of the step 4.
7. Receive the NTSC color-bar and adjust as step 7.

SUB HUE ADJUSTMENT (SHU)

1. Receive a NTSC color-bar.
2. Connect an oscilloscope to the pin ⑦ (B OUT) of CN 118, A board.
3. Select 04 (SHU) with 1 and 4 of the commander by setting to Service Mode and adjust to VB 1=VB 2 =VB 3=VB 4 with 3 and 6.



VB 1=VB 2=VB 3=VB 4

4. Press MUTING → 0 of the commander to write the data.
5. Set to WIDE Mode by MENU button to write the same value as the step 3.

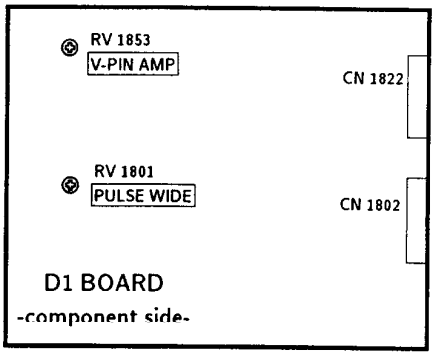
PIP H. V. POSITION (P-H, P-V)

1. Receive a PAL color-bar.
2. Set the PIP picture by pressing PIP button of the commander.
3. Set to Service Mode.
4. Select 33 (P-V) with the 1 and 4 of the commander to set the data "07" with 3 and 6.
5. Select 35 (P-H) to set the data "0 A".
6. Receive a NTSC color-bar.
7. Select 33 (P-V) to set the data "07" with 3 and 6. Select 35 (P-H) to set the data "07" with 3 and 6.
8. Check by pressing POSITION of the commander.
9. Press MUTING → 0 of the commander to write the data.

Y. FILTER ADJUSTMENT (YF1)

1. Set to Service Mode.
2. Select 14 (Y. SW) with the 1 and 4 of the commander to set the data "3" with 3 and 6.
3. Put SINE wave of 4.43 MHz to the pin ② (YIN) of IC304.
4. Connect an oscilloscope to the pin ① of CN105, A board.
5. Adjust so that the waveform is minimum by selecting 11 (YF1) with 3 and 6.
6. Press MUTING → 0 of the commander to write the data.

5-5. D1 BOARD ADJUSTMENT



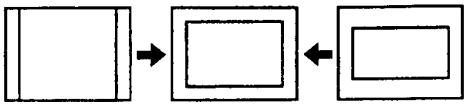
V-PIN AMP, PULSE WIDTH ADJUSTMENT (RV 1853, RV 1801)

1. Receive a color-bar.
2. Connect AC voltmeter between the pin ① of CN 1802 and GND.
3. Turn RV 1853 clockwise to the end and RV 1801 counterclockwise to the end.
4. Turn RV 1801 clockwise a little to adjust the value on the AC voltmeter to AC 25 ± 0.5 Vp-p.

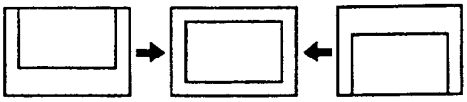
5-6. PICTURE DISTORTION ADJUSTMENT

Item Numbers 23-2D

23 VSZ (V SIZE)



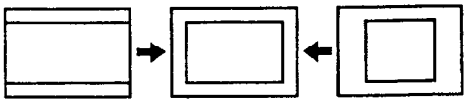
24 VSF (V SHIFT)



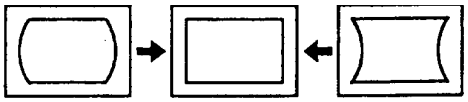
25 SCR (VERTICAL S correction)

26 VLN (V LINEARITY)

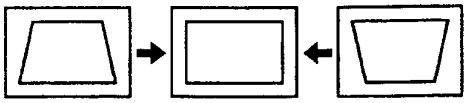
27 HSZ (H SIZE)



28 PAP (PIN AMP)



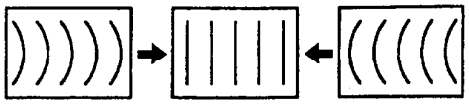
29 TLT (TILT)



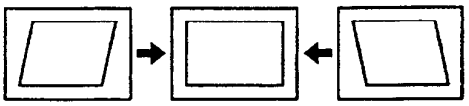
2A UCP (Upper Corner Pin)

2B LCP (Lower Corner Pin)

2C VBOW (V-BOW)



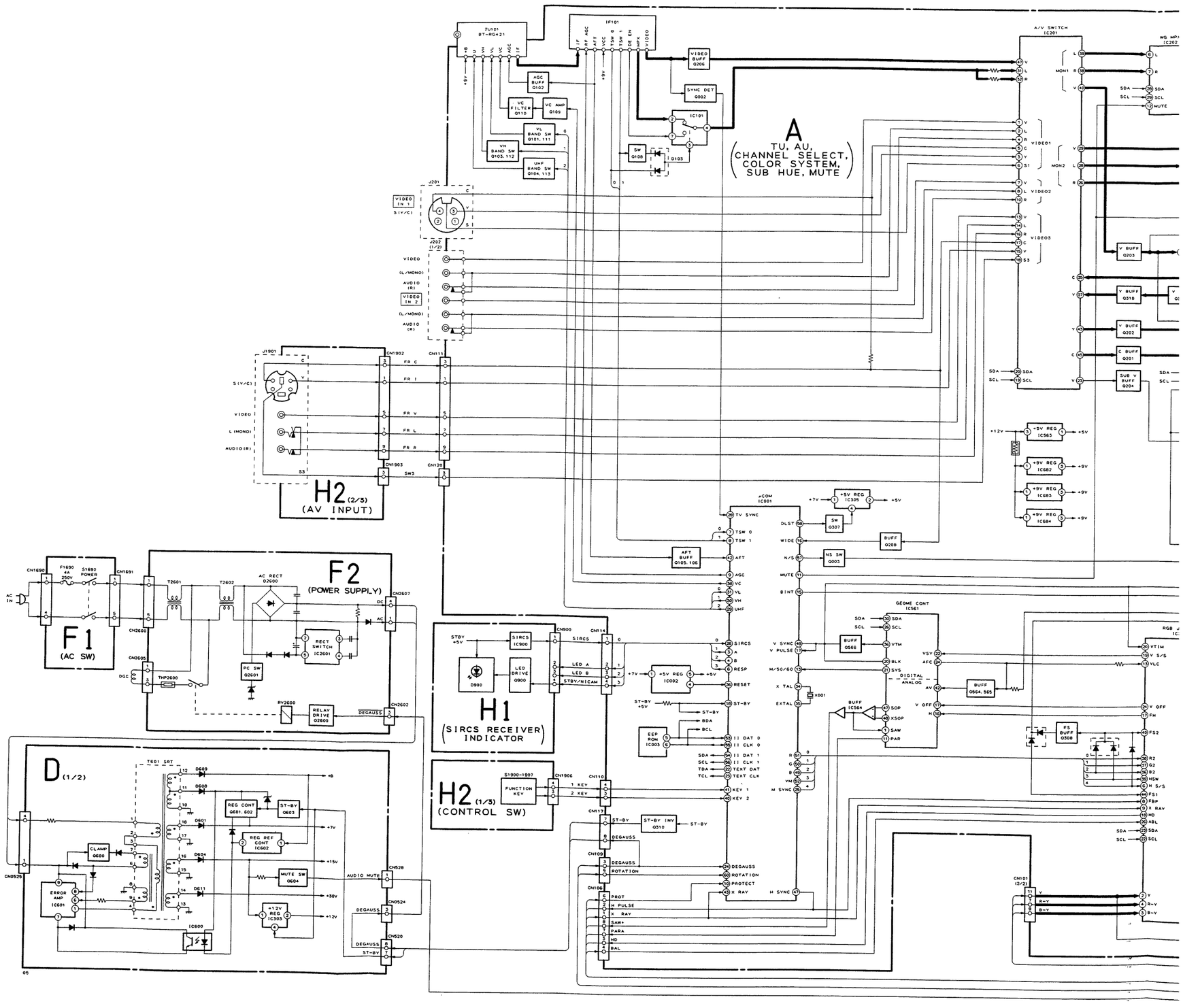
2D VAG (V-ANGLE)



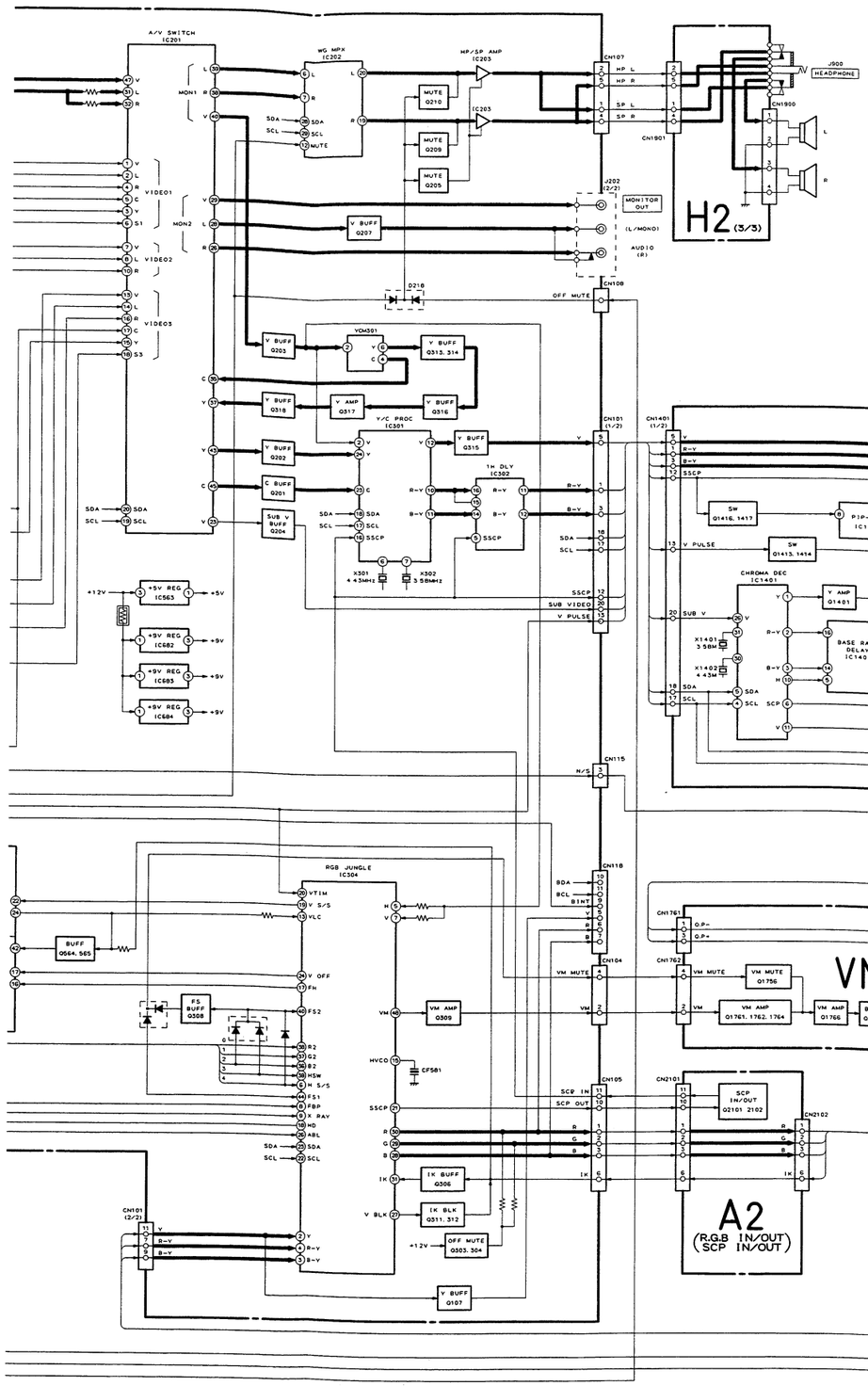
SECTION 6
DIAGRAMS

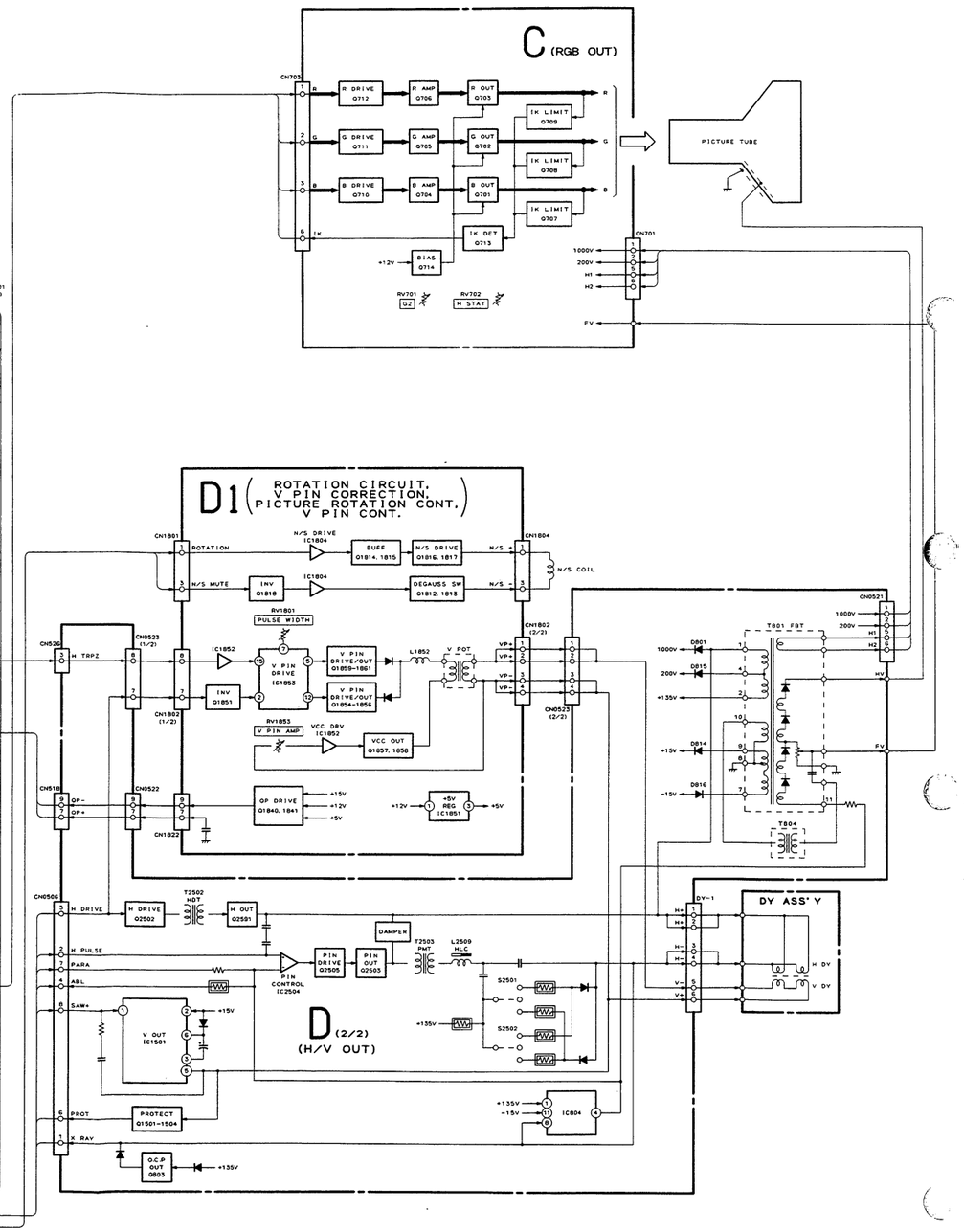
6-1. BLOCK DIAGRAM

KV-K29CF1
RM-845P

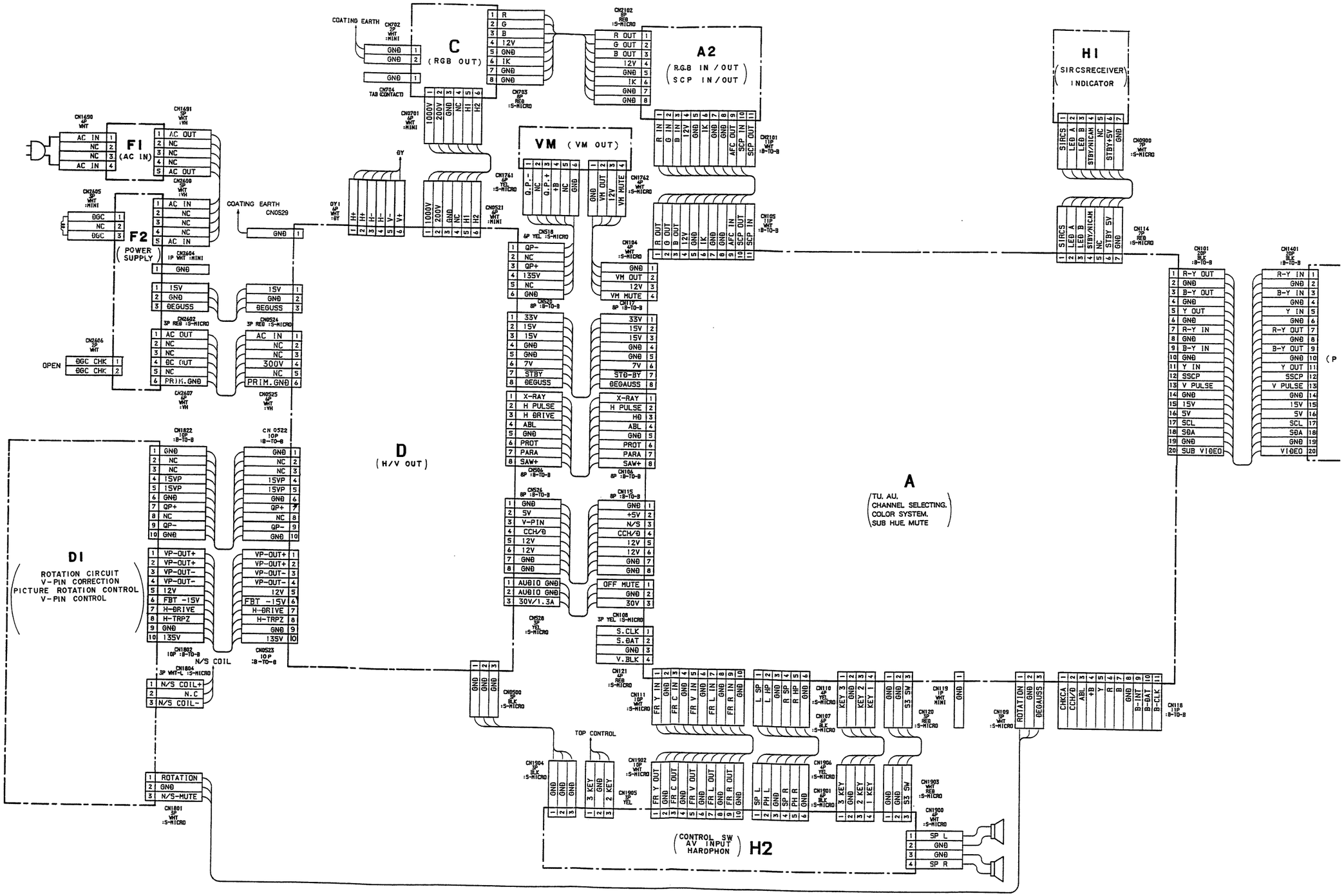


KV-K29CF1
RM-845P



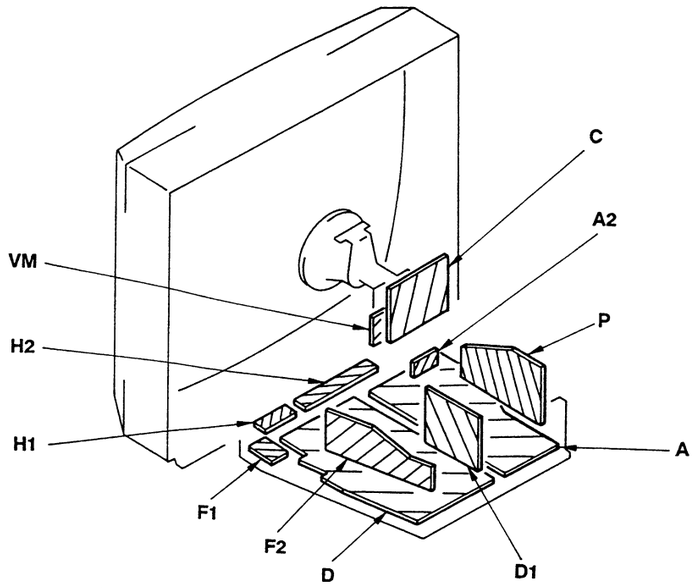


6-2. FRAME SCHEMATIC DIAGRAM


C (RGB OUT)
A2 (R.G.B IN / OUT SCP IN / OUT)
HI (SIRCS RECEIVER INDICATOR)
VM (VM OUT)
F1 (AC IN)
F2 (POWER SUPPLY)
D (H/V OUT)
A (TU. AU. CHANNEL SELECTING. COLOR SYSTEM. SUB HUE. MUTE)
D1 (ROTATION CIRCUIT V-PIN CORRECTION PICTURE ROTATION CONTROL V-PIN CONTROL)
H2 (CONTROL SW AV INPUT HARDPHON)
COATING EARTH
N/S COIL
TOP CONTROL
OPEN

KV-K29CF1
RM-845P

CIRCUIT BOARDS LOCATION



6-4. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.
  kΩ =1000Ω, MΩ =1000KΩ
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm
Rating electrical power ¼ W (CHIP: 1/10W)

- : nonflammable resistor.
- △ : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Readings are taken with a color-bar signal input.
  no mark : PAL
  〈 〉: SECAM
  ( ): NTSC 3.58
  { }: NTSC 4.43
- Readings are taken with a 10 MΩ digital multimeter.
- Voltage are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- ＊ : Can not be measured.
- Circled numbers are waveform reference.
- ▬▬ : B + bus.
- ▬ ▬ ▬ : B − bus.
- ▒▒▒ : signal path.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: ※	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

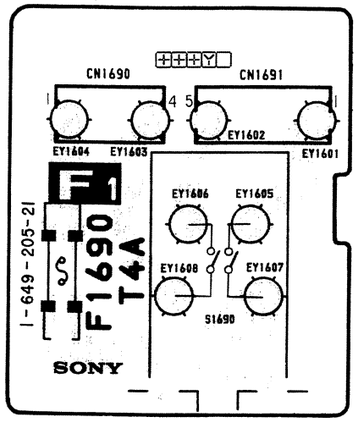
KV-K29CF1 RM-845P

PRINTED WIRING BOARDS

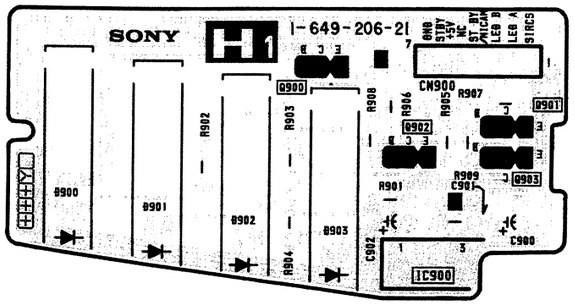
F1 [AC IN] H1 [SIRCS RECEIVER, INDICATOR]

F2 [POWER SUPPLY] H2 [CONTROL SW, AV INPUT, HEADPHONE]

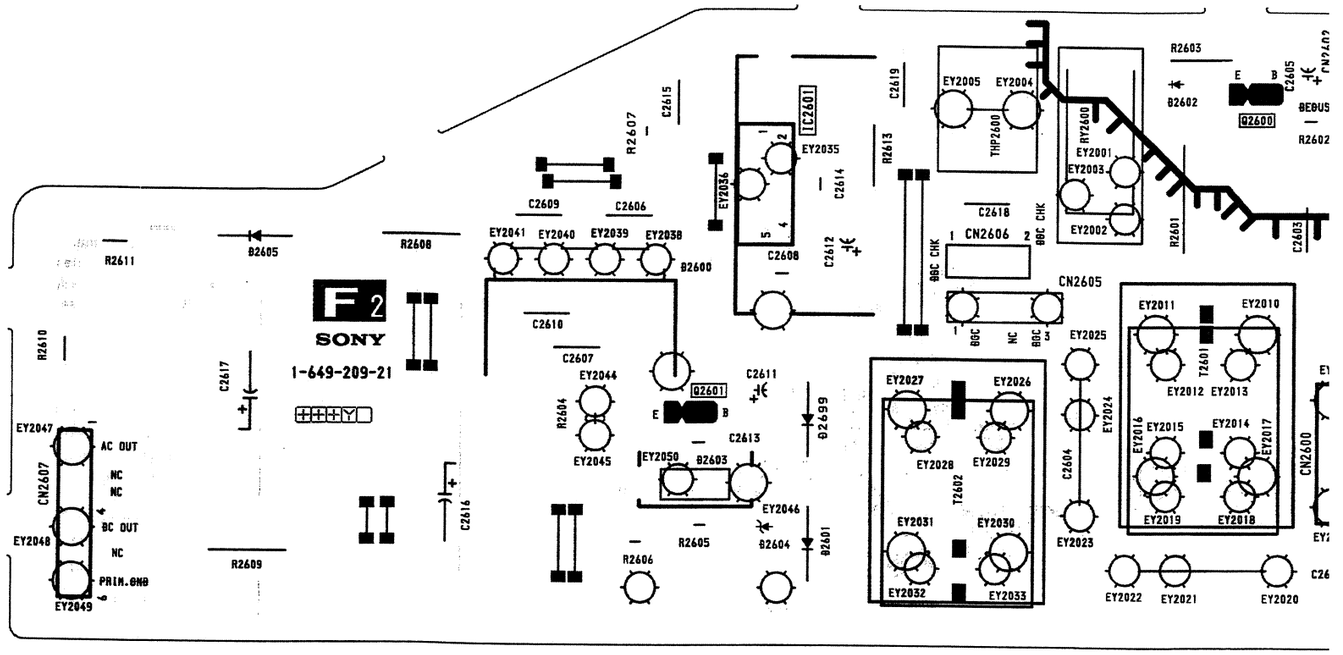
– F1 Board –



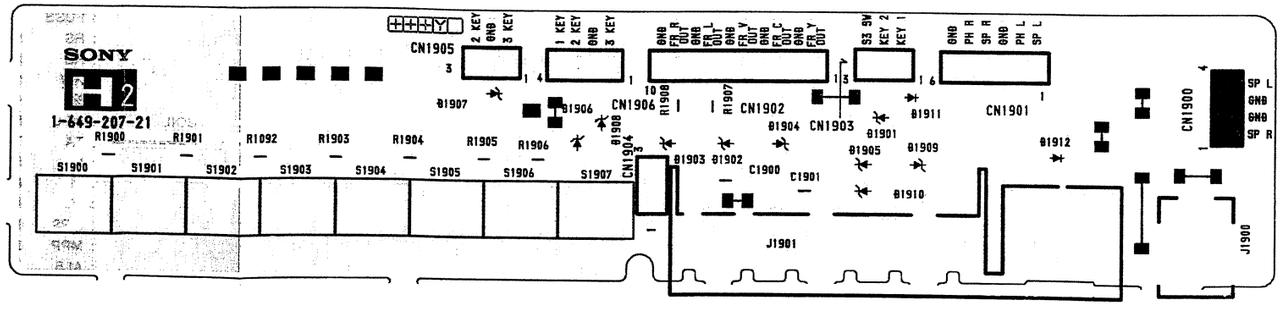
– H1 Board –

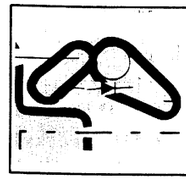


– F2 Board –



– H2 Board –



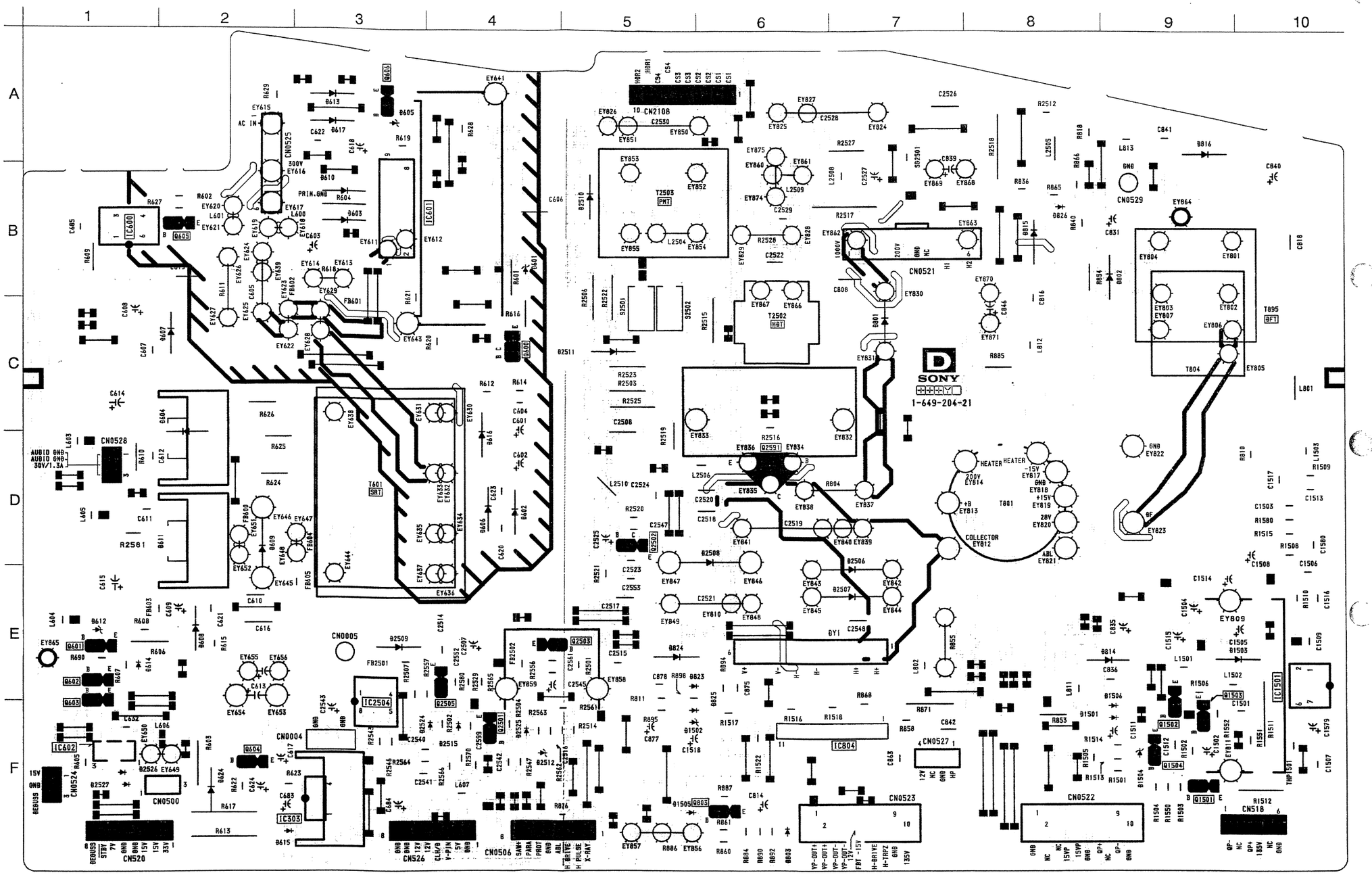


NOTE:
The cir
600 Vp
inspecti

KV-K29CF1
RM-845P

D [H/V OUT]

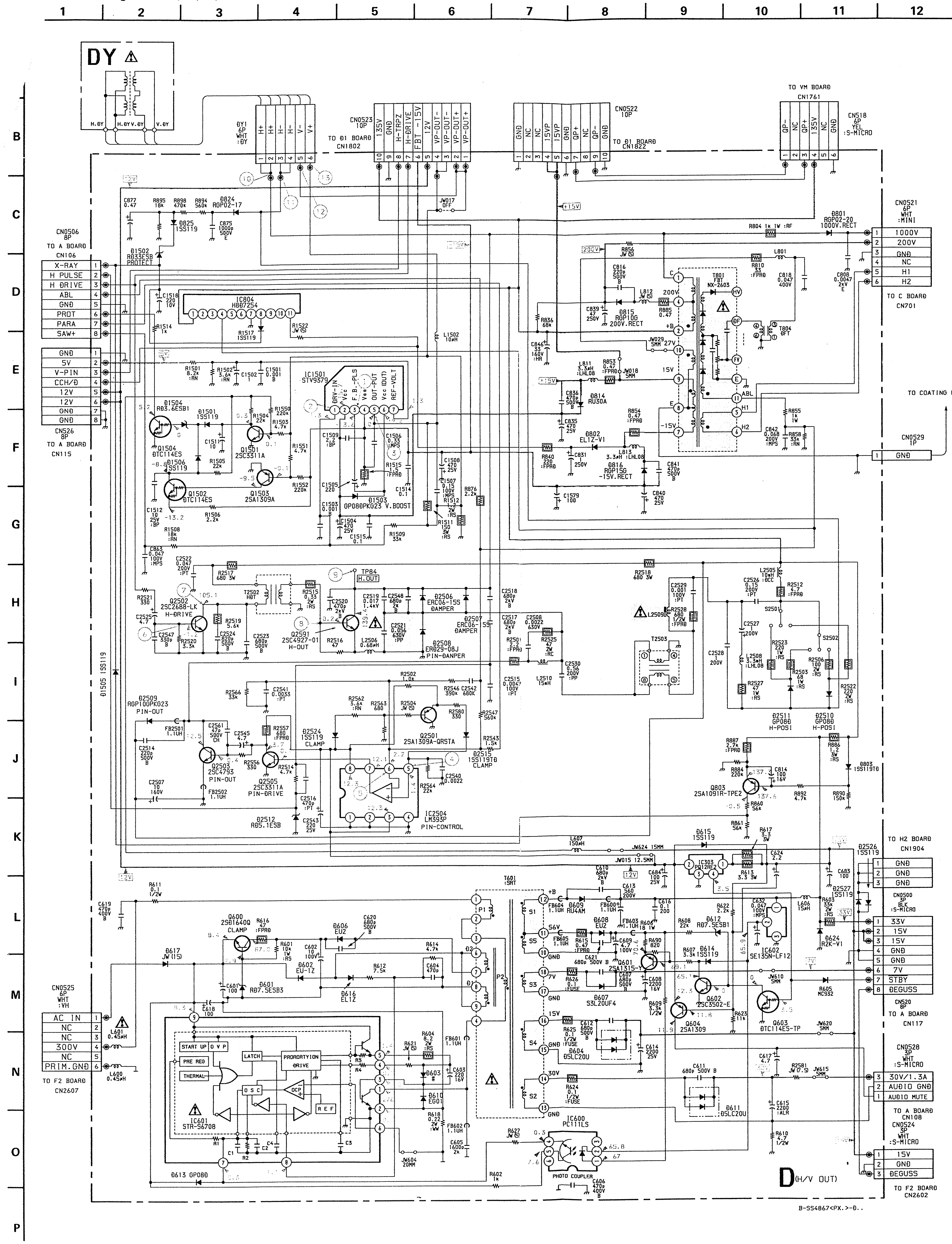
– D Board –

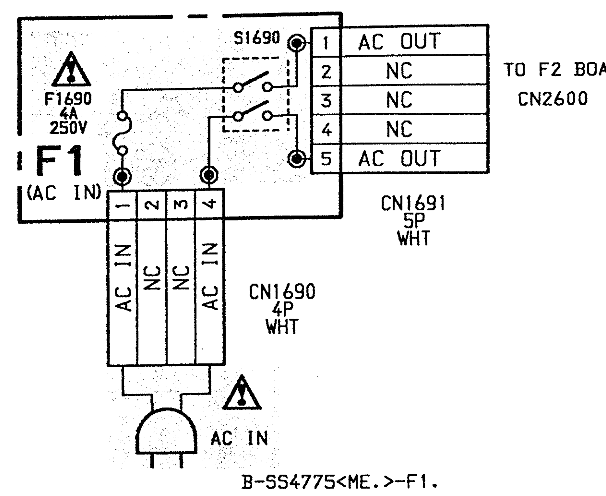


• D BOARD

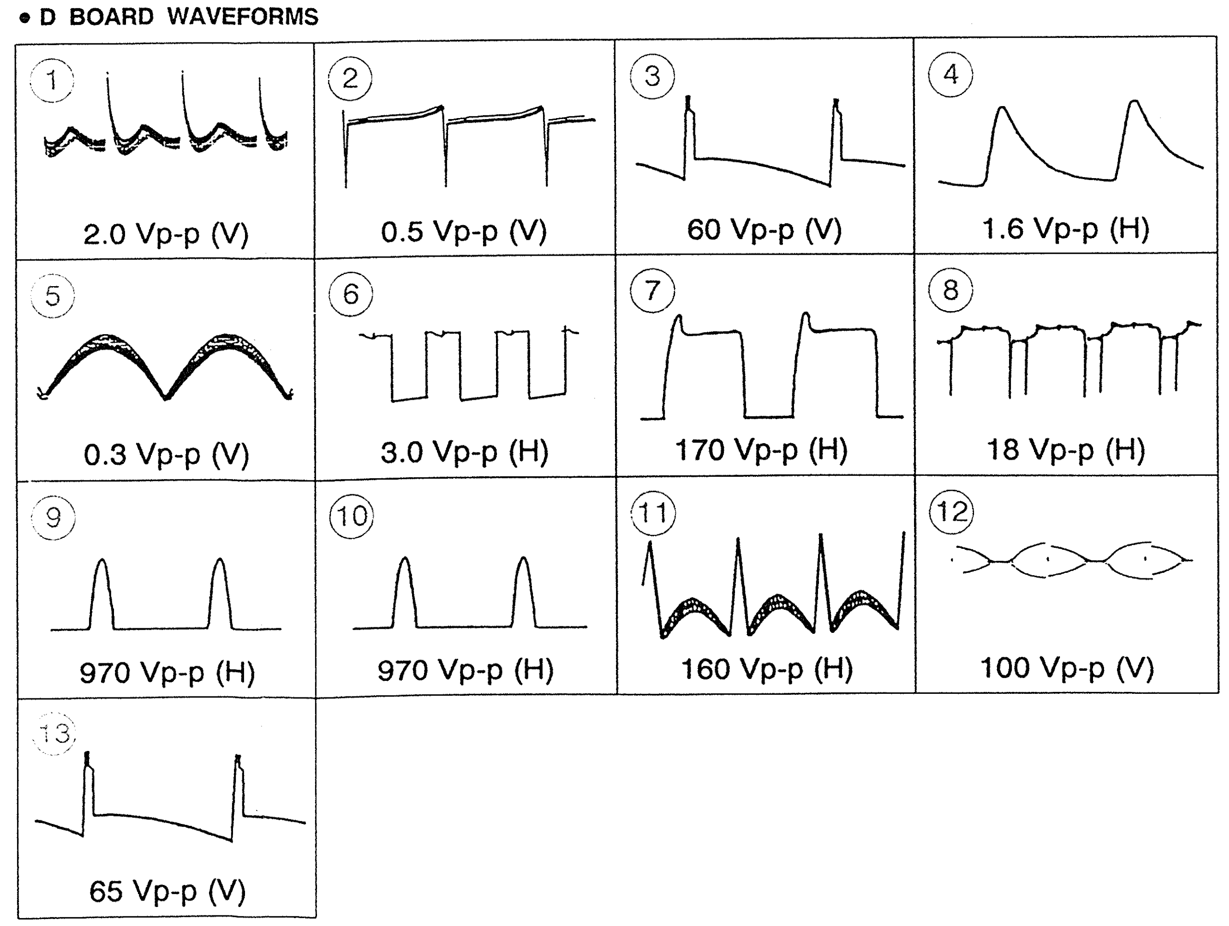
IC		DIODE	
IC303	F – 3	D601	B – 4
IC600	B – 1	D602	D – 4
IC601	B – 3	D604	C – 2
IC602	F – 1	D606	D – 4
IC804	F – 7	D607	C – 2
IC1501	E – 10	D608	E – 2
IC2504	E – 3	D609	D – 2
		D610	B – 3
		D611	D – 2
		D612	E – 1
		D613	A – 3
		D614	E – 1
		D615	F – 2
		D616	D – 4
		D617	A – 3
		D624	F – 2
TRANSISTOR		D801	C – 7
		D802	B – 9
		D803	F – 6
Q600	C – 4	D814	E – 9
Q601	E – 1	D815	B – 8
Q602	E – 1	D816	A – 9
Q603	E – 1	D824	E – 5
Q604	F – 3	D825	E – 5
Q803	F – 6	D1501	E – 9
Q1501	F – 9	D1502	F – 5
Q1502	E – 9	D1503	E – 10
Q1503	E – 9	D1504	F – 9
Q1504	F – 9	D1505	F – 5
Q2501	F – 4	D1506	E – 9
Q2502	D – 5	D2506	D – 7
Q2503	E – 4	D2507	E – 7
Q2505	E – 4	D2508	D – 6
Q2591	D – 6	D2509	E – 3
		D2510	B – 5
		D2511	C – 5
		D2512	F – 4
		D2515	F – 4
		D2524	F – 3
		D2526	F – 1
		D2527	F – 1

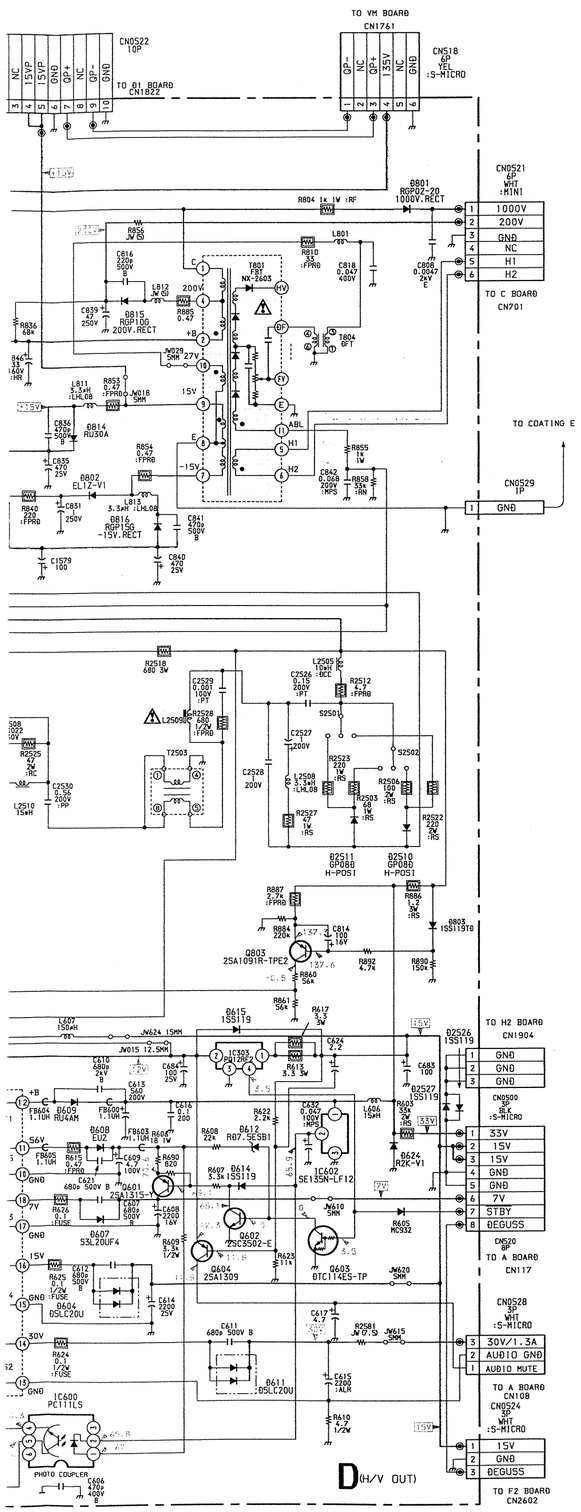
:ed as left contains high voltage of over
ıst be paid to prevent an electric shock in
ring.

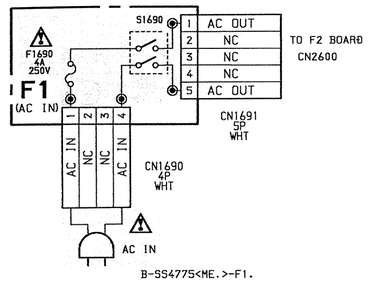


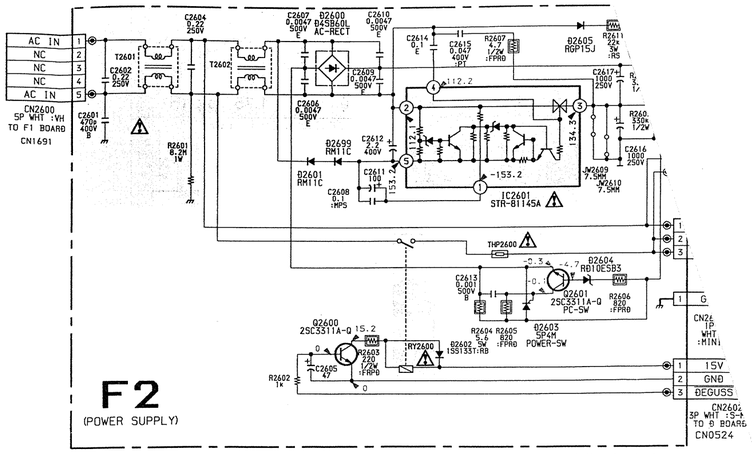


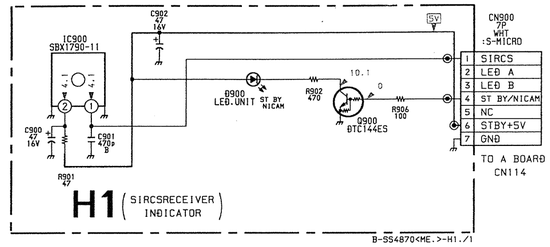
• D BOARD WAVEFORMS

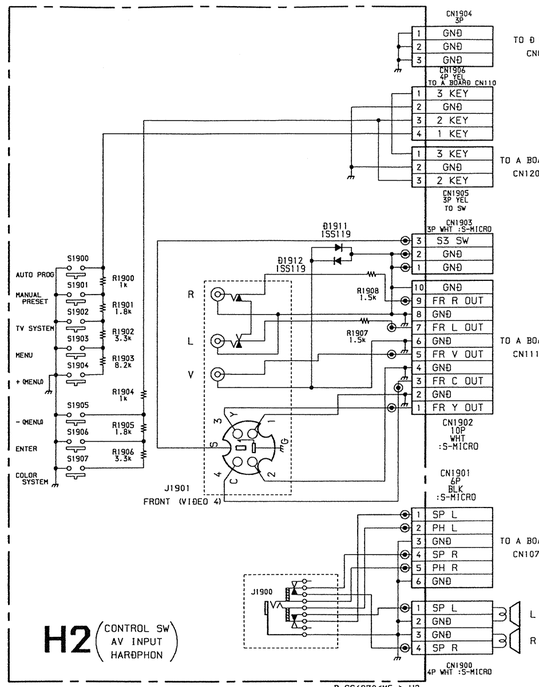












• D BOARD WAVEFORMS

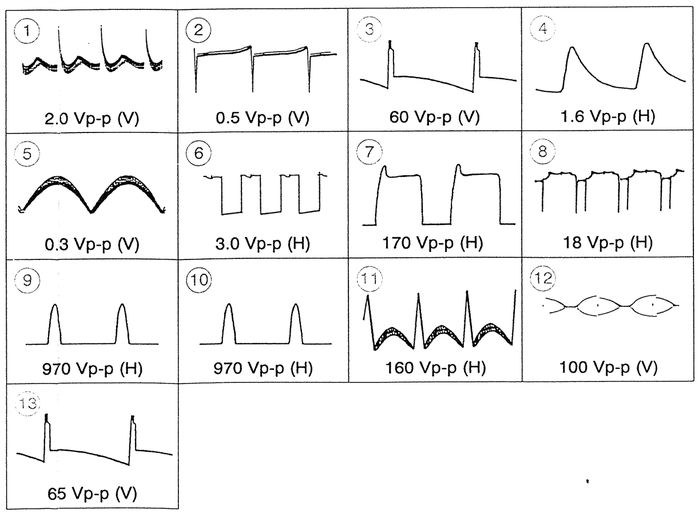
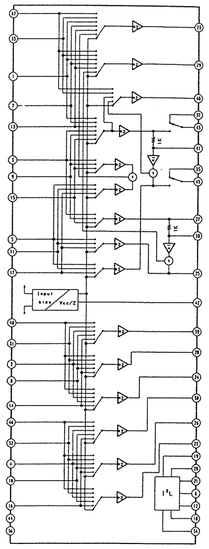

1 2.0 Vp-p (V)
2 0.5 Vp-p (V)
3 60 Vp-p (V)
4 1.6 Vp-p (H)
5 0.3 Vp-p (V)
6 3.0 Vp-p (H)
7 170 Vp-p (H)
8 18 Vp-p (H)
9 970 Vp-p (H)
10 970 Vp-p (H)
11 160 Vp-p (H)
12 100 Vp-p (V)
13 65 Vp-p (V)

Diagram of A Board

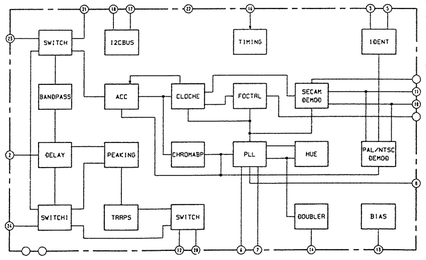
AVEFORMS

5 Vp-p (H)	(2) 2.0 Vp-p (H)	(3) PAL SECAM NTSC4.43 2.0 Vp-p (H)	(3) NTSC3.58 1.75 Vp-p (H)
2.25 Vp-p (H)	(5) 2.25 Vp-p (H)	(6) 2.0 Vp-p	(7) PAL SECAM NTSC4.43 2.0 Vp-p (H)
(7) NTSC3.58 1.75 Vp-p (H)	(8) 1.2 Vp-p (H)	(9) PAL SECAM NTSC4.43 1.1 Vp-p (H)	(9) NTSC3.58 0.8 Vp-p (H)
(10) 1.2 Vp-p (H)	(11) 0.8 Vp-p (H)	(12) 0.9 Vp-p (H)	(13) 0.8 Vp-p (H)
(14) 0.9 Vp-p (H)	(15) 1.6 Vp-p (H)	(16) 1.3 Vp-p	(17) 3.2 Vp-p (H)
(18) 3.2 Vp-p (H)	(19) 3.2 Vp-p (H)		

A Board IC201 CXA1545AS



A Board IC301 TDA9145



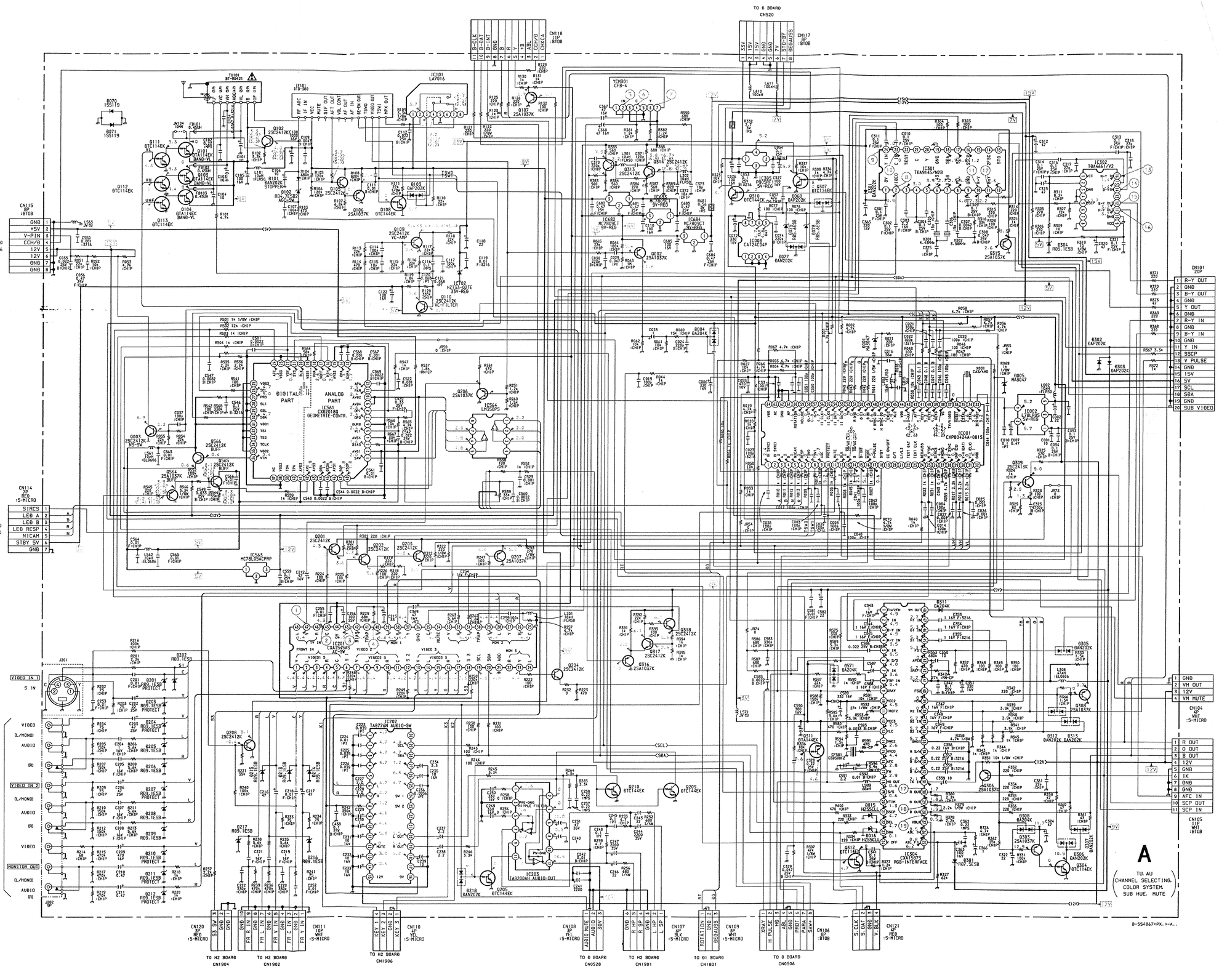
Schematic diagrams

D F1 F2

← H1 H2 boards

Schematic diagram

A board →

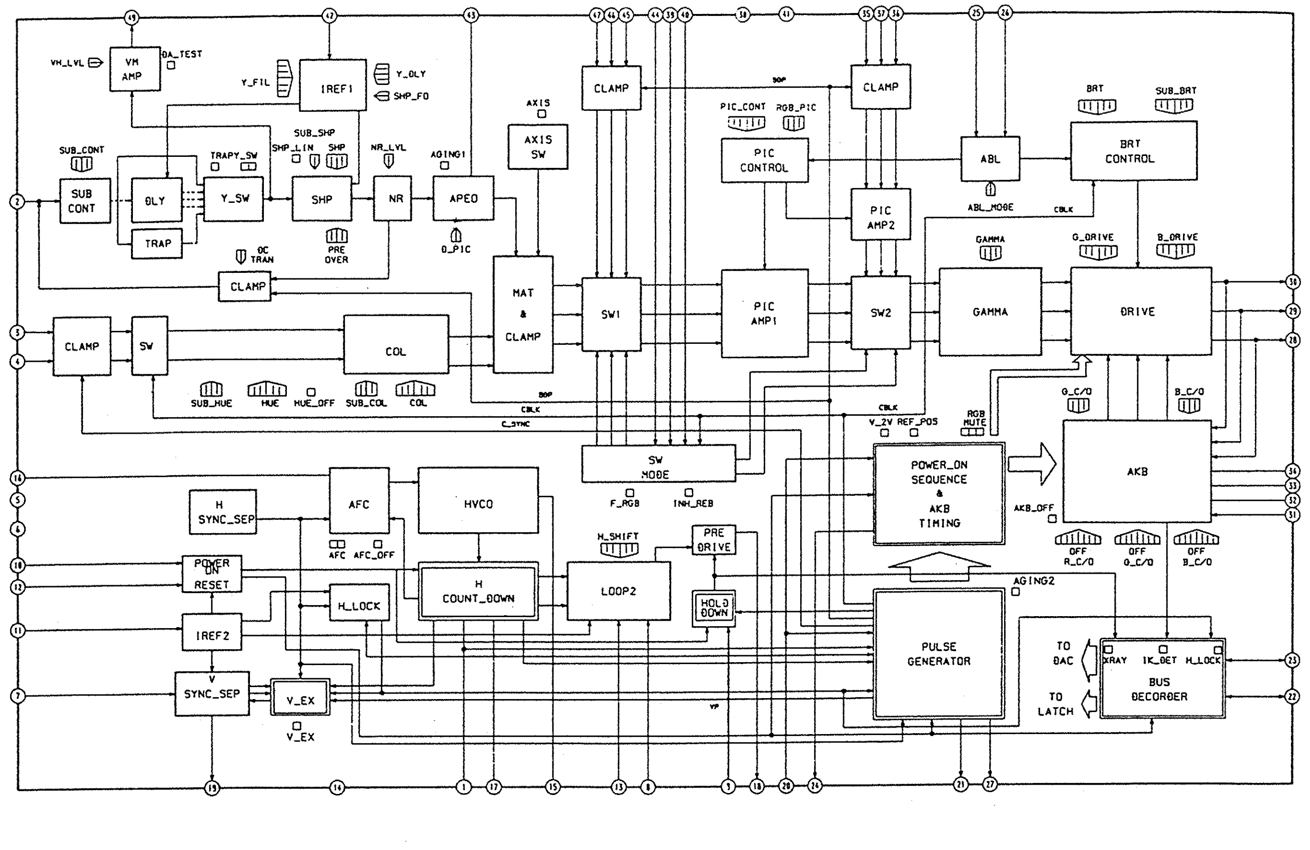

TO G BOARD
CN520
CN117
8P
:BTOB
CN118
11P
:BTOB
CN115
8P
:BTOB
TO G BOARD
CN526
CN114
7P
REG
:S-MICRO
TO H1 BOARD
CN900
CN101
20P
TO P BOARD
CN1401
CN104
4P
WHT
:S-MICRO
TO VM BOARD
CN1762
CN105
11P
WHT
:BTOB
TO A2 BOARD
CN2101
CN120
3P
RED
:S-MICRO
TO H2 BOARD
CN1904
CN111
10P
WHT
:S-MICRO
TO H2 BOARD
CN1902
CN110
4P
YEL
:S-MICRO
TO H2 BOARD
CN1906
CN108
3P
YEL
:S-MICRO
TO G BOARD
CN0528
CN107
6P
BLK
:S-MICRO
TO H2 BOARD
CN1901
CN109
3P
WHT
:S-MICRO
TO G1 BOARD
CN1801
CN106
10P
:BTOB
TO G BOARD
CN0506
CN121
4P
RED
:S-MICRO
DIGITAL(5V) PART
ANALOG PART
IC561
CX20218D0
GEOMETRIE CONTR.
IC563
MC78L05ACPRP
IC564
LA6358PS
IC565
LA6324M
IC566
LA6356
IC567
LA6324M
IC568
LA6356
IC201
CXA1645AS
AC-SW
IC202
TA8220AK
AUDIO-OUT
IC202
TA8772AN
AUDIO-SW
IC501
T0A9145/N2B
IC502
T0A4667/YZ
IC503
CAT24C04P
IC504
CXA1607S
RGB-INTERFACE
IC001
CXP80424A-081S
A
TU. AU
CHANNEL SELECTING.
COLOR SYSTEM.
SUB HUE. MUTE
B-5548&7<PX.>-A..

KV-K29CF1
RM-845P

KV-K29CF1
RM-845P

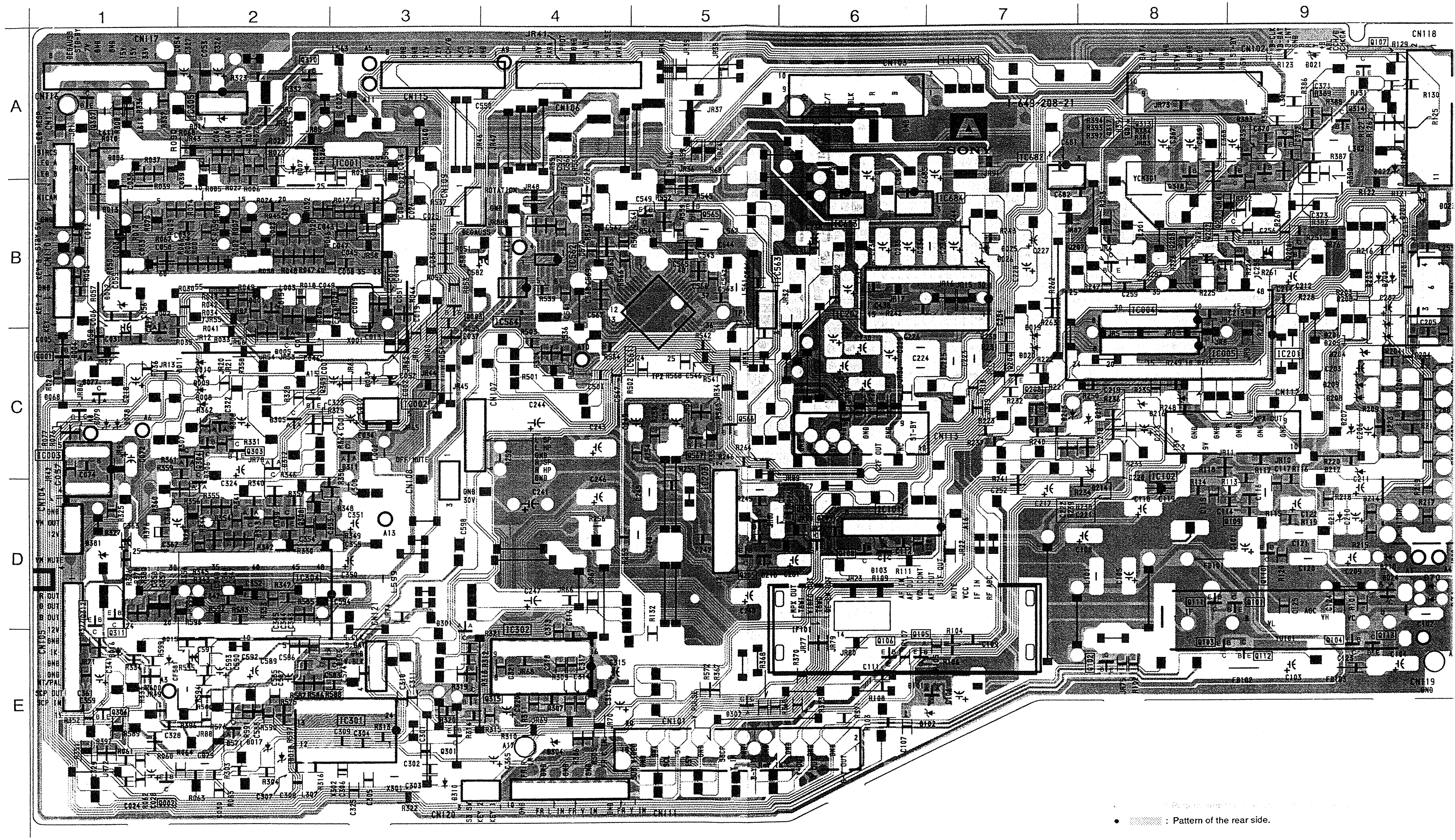
A [TU, AU, CHANNEL SELECTION, COLOR SYSTEM, SUB HUE, MUTE]

A Board IC304 CXA1587S



PRINTED WIRING BOARDS

– A Board –



• ░░░ : Pattern of the rear side.

• A BOARD

IC	
IC001	B – 2
IC002	C – 3
IC003	C – 1
IC101	D – 6
IC102	C – 8
IC201	C – 9
IC202	B – 6
IC203	D – 5
IC301	E – 3
IC302	E – 4
IC304	D – 2
IC305	A – 2
IC561	C – 5
IC563	B – 5
IC564	B – 4
IC682	A – 7
IC683	B – 6
IC684	B – 6

TRANSISTOR	
Q002	E – 1
Q003	B – 3
Q101	D – 9
Q102	E – 8
Q103	E – 9
Q104	E – 9
Q105	E – 6
Q106	E – 6
Q107	A – 9
Q108	D – 6
Q109	D – 9
Q110	D – 9
Q111	D – 9
Q112	E – 9
Q113	E – 9
Q201	B – 9
Q202	B – 8
Q203	B – 8
Q204	C – 7
Q205	D – 5
Q206	B – 9
Q207	B – 8
Q208	C – 7
Q209	D – 6
Q210	D – 5
Q303	C – 2
Q304	C – 2
Q306	E – 1
Q307	A – 1
Q308	D – 2
Q309	C – 2
Q310	A – 2
Q311	D – 1
Q312	D – 1
Q313	B – 9
Q314	A – 9
Q315	E – 3
Q316	A – 9
Q317	A – 9
Q318	A – 8
Q564	B – 5
Q565	B – 5
Q566	C – 5

DIODE	
D001	B – 2
D004	C – 1
D005	C – 2
D015	E – 1
D016	E – 1
D068	C – 1
D077	C – 1
D078	C – 1
D079	C – 1
D101	E – 7
D102	E – 6
D103	D – 6
D201	B – 9
D202	B – 9
D203	B – 9
D204	C – 9
D205	B – 9
D206	B – 9
D207	C – 9
D208	C – 9
D209	C – 9
D210	D – 9
D211	D – 9
D212	D – 9
D213	C – 8
D214	C – 8
D215	C – 8
D216	C – 8
D217	C – 8
D218	D – 5
D301	D – 3
D302	E – 5
D303	E – 2
D304	E – 4
D305	C – 2
D306	D – 2
D307	C – 2
D308	C – 2
D311	C – 3
D312	C – 2
D313	C – 2
D381	D – 1
D571	E – 2

IF BLOCK	
IF101	D – 6

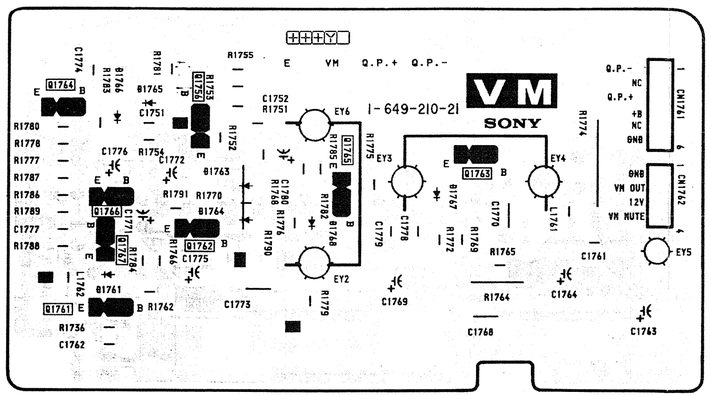
TUNER	
TU101	E – 9

CRYSTAL	
X001	C – 3
X301	E – 3
X302	E – 2

VM [VM OUT]

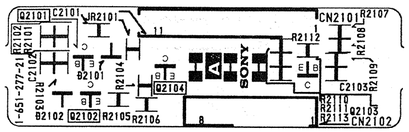
PRINTED WIRING BOARDS

– VM Board –



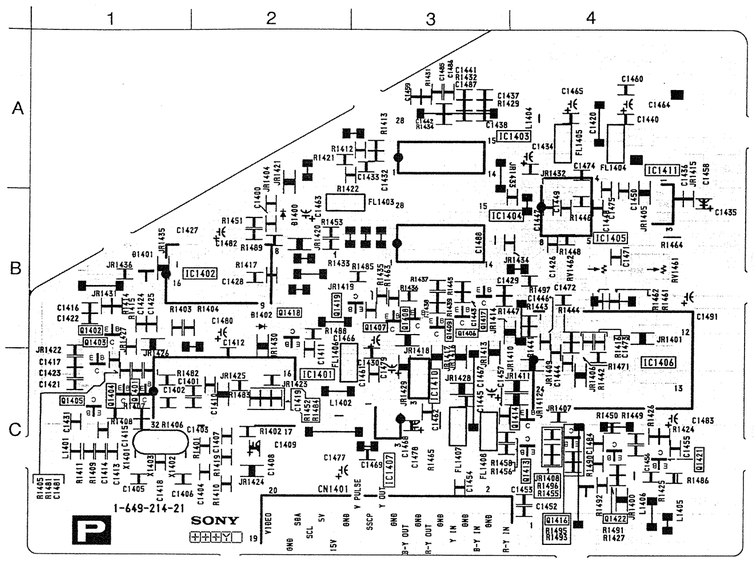
A2 [R, G, B IN/OUT, SCP IN/OUT]

– A2 Board –



P [P IN P]

– P Board –



• P BOARD

IC				DIODE	
IC1401	C – 2	Q1403	C – 1	D1400	B – 2
IC1402	B – 2	Q1404	C – 1	D1401	B – 1
IC1403	A – 3	Q1405	C – 1		
IC1404	B – 3	Q1406	B – 3	CRYSTAL	
IC1405	B – 4	Q1407	B – 3	X1401	C – 1
IC1406	C – 4	Q1408	B – 3	X1402	C – 1
IC1407	C – 3	Q1409	B – 3		
IC1410	C – 3	Q1413	C – 4		
IC1411	B – 4	Q1414	C – 4		
		Q1416	C – 4		
TRANSISTOR		Q1417	B – 3		
		Q1418	B – 2		
Q1401	C – 1	Q1419	B – 3		
Q1402	B – 1	Q1420			
		Q1421	C – 4		
		Q1422	C – 4		

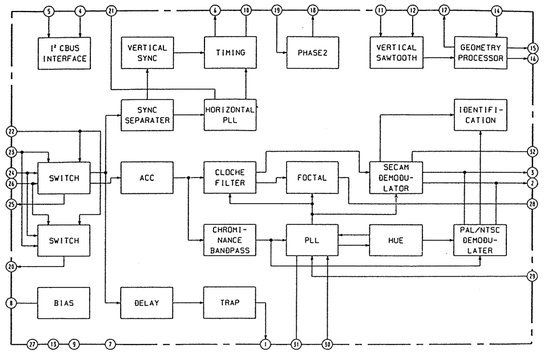
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

C D E F G H I J K L M N O P

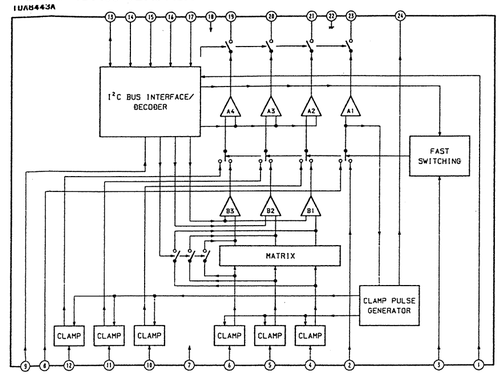
• P BOARD WAVEFORMS

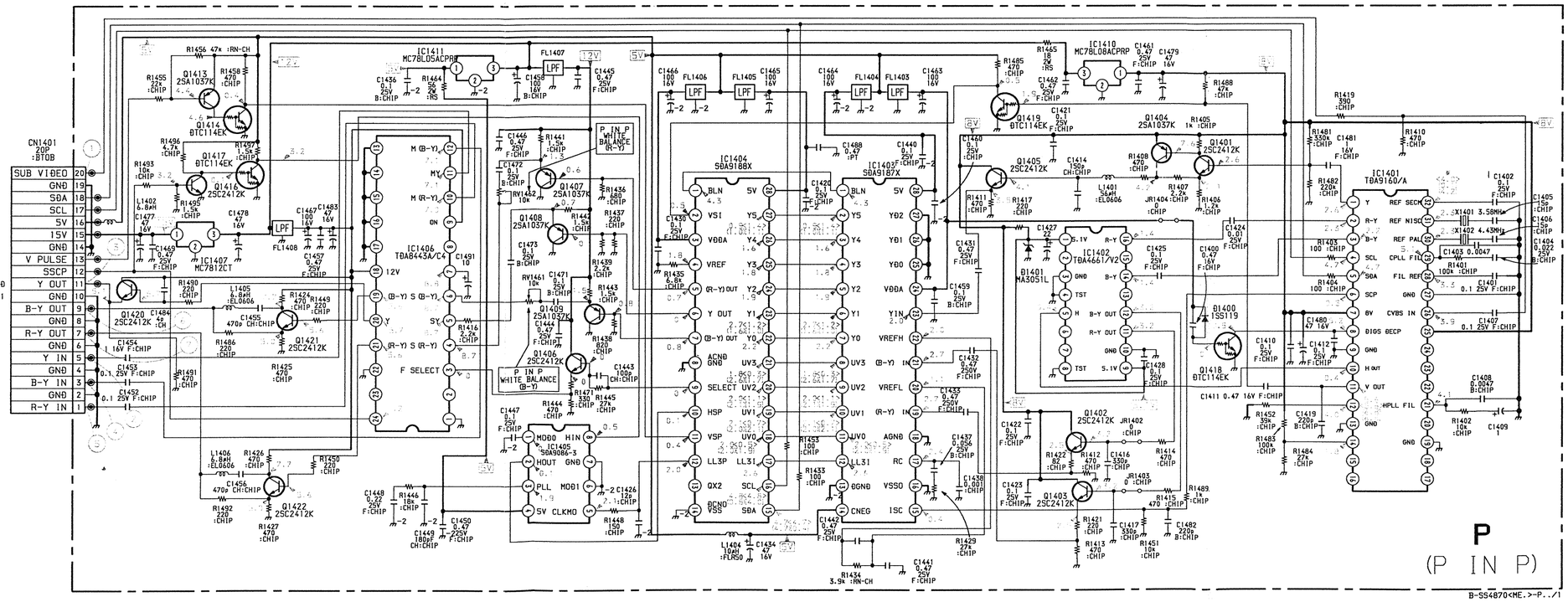
① 2.0 Vp-p (H)	② PAL SECAM NYSC3.58 0.4 Vp-p (H)	② NTSC4.43 0.4 Vp-p (H)	③ PAL SECAM NYSC3.58 0.4 Vp-p (H)
③ NTSC4.43 0.4 Vp-p (H)	④ 1.5 Vp-p (H)	⑤ 1.3 Vp-p (H)	⑥ 1.5 Vp-p (H)
⑦ 1.3 Vp-p (H)			

P Board IC1401 TDA9160

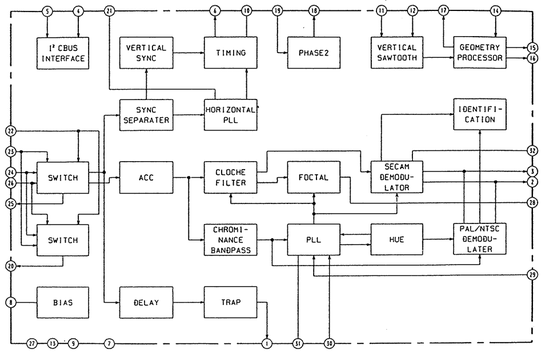


P Board IC1406 TDA8443A

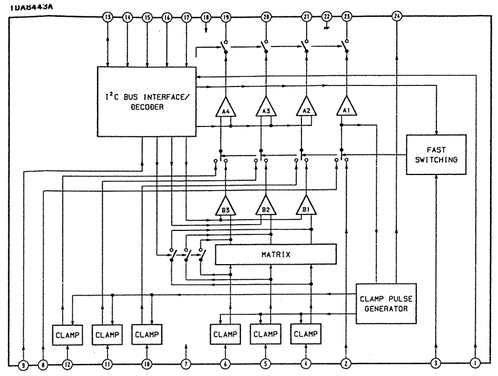


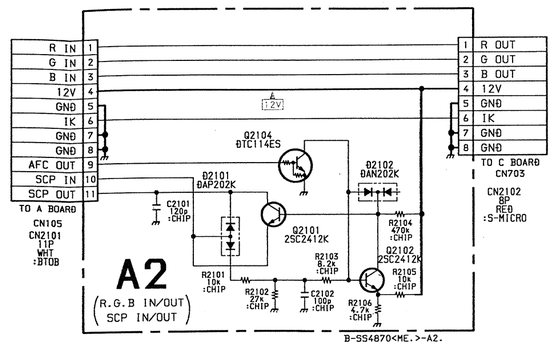


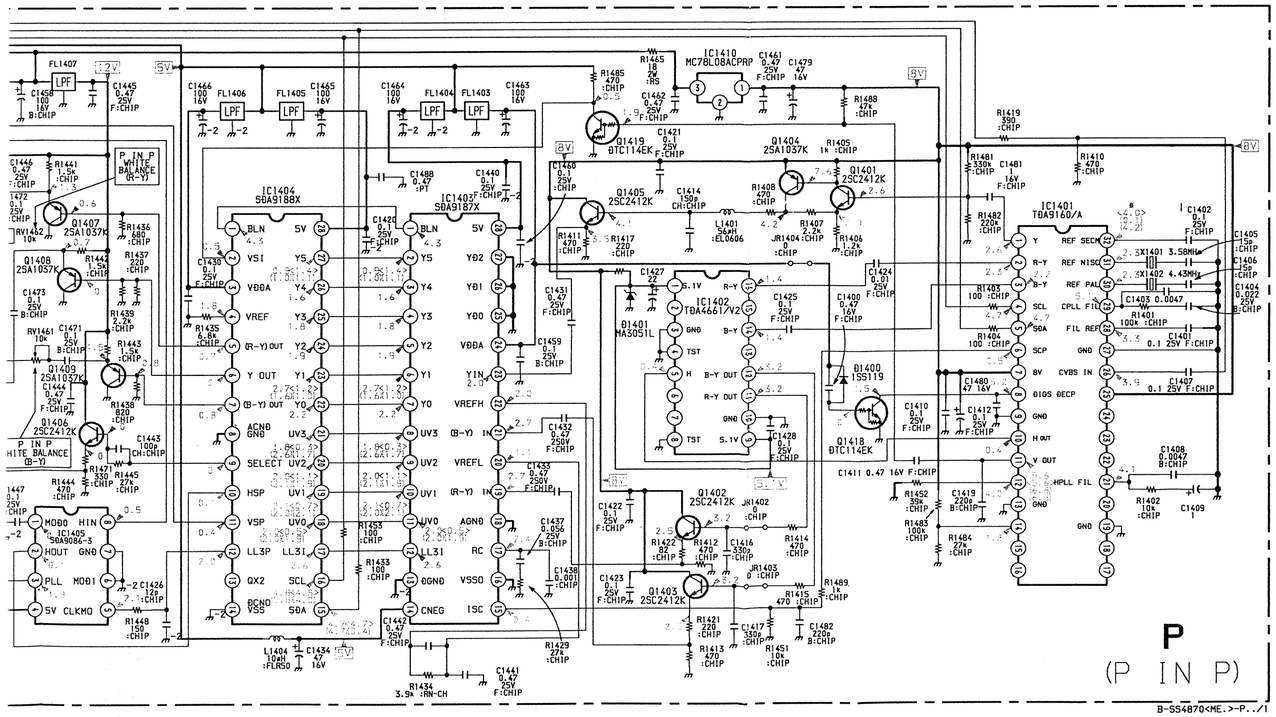
P Board IC1401 TDA9160

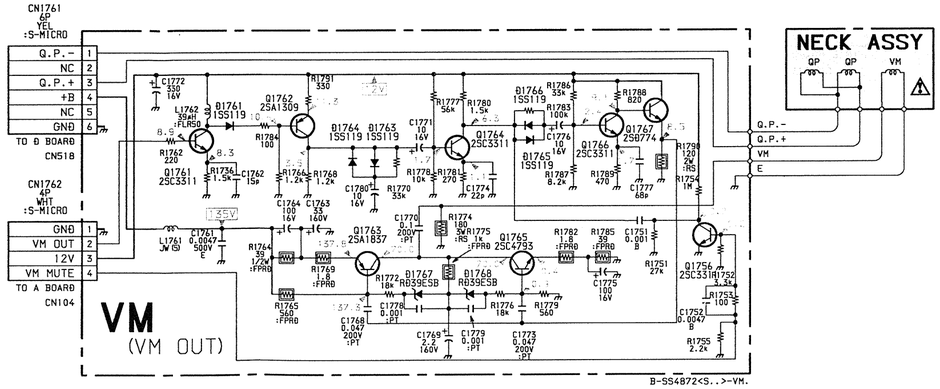


P Board IC1406 TDA8443A

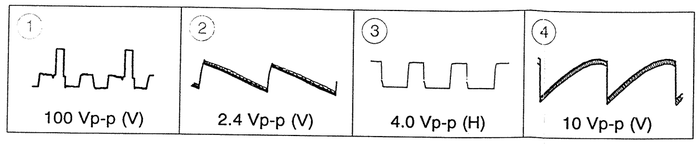


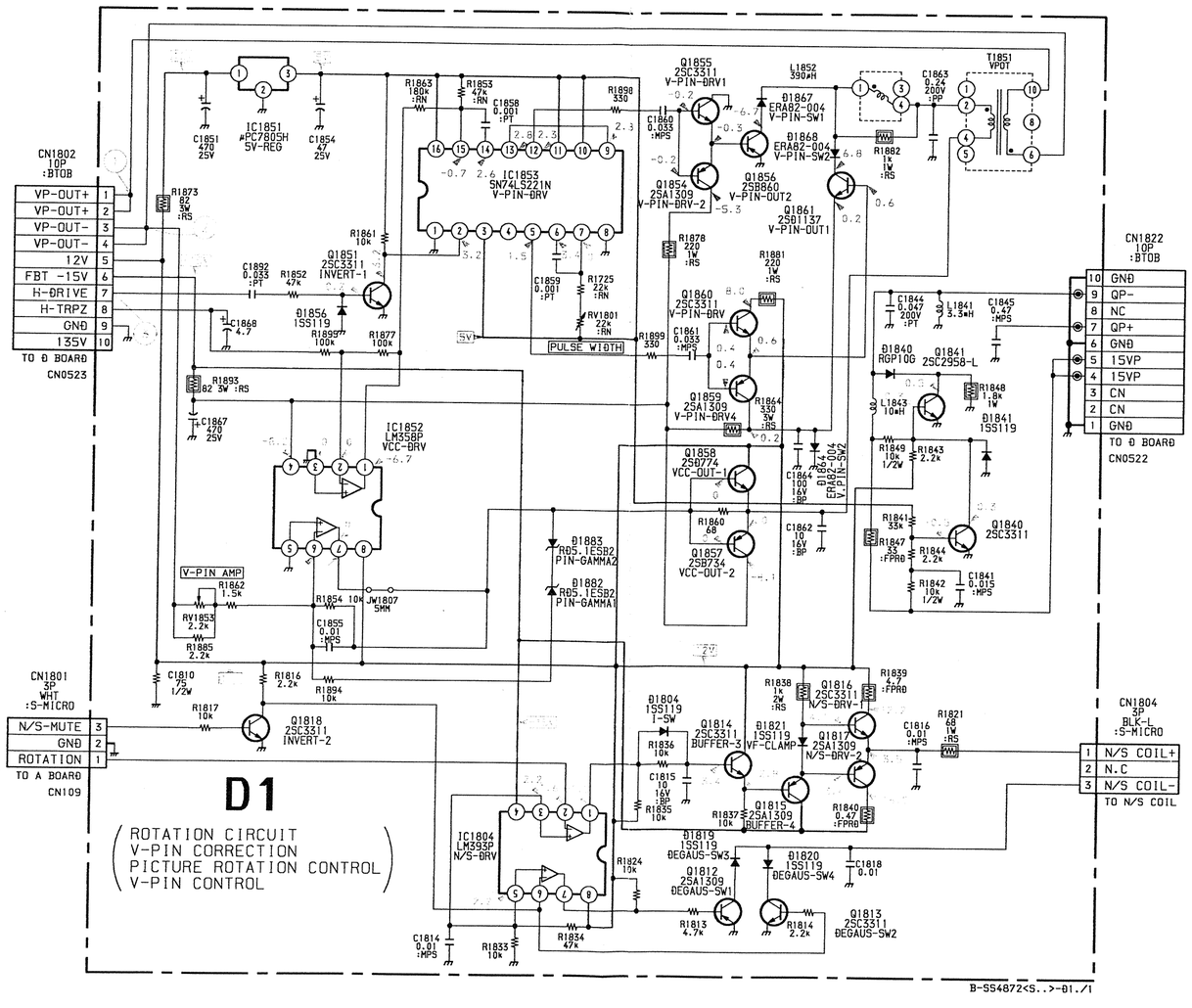






• D1 BOARD WAVEFORMS

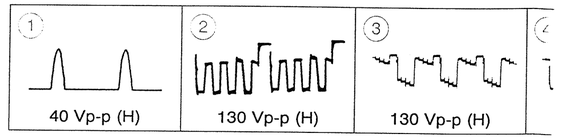


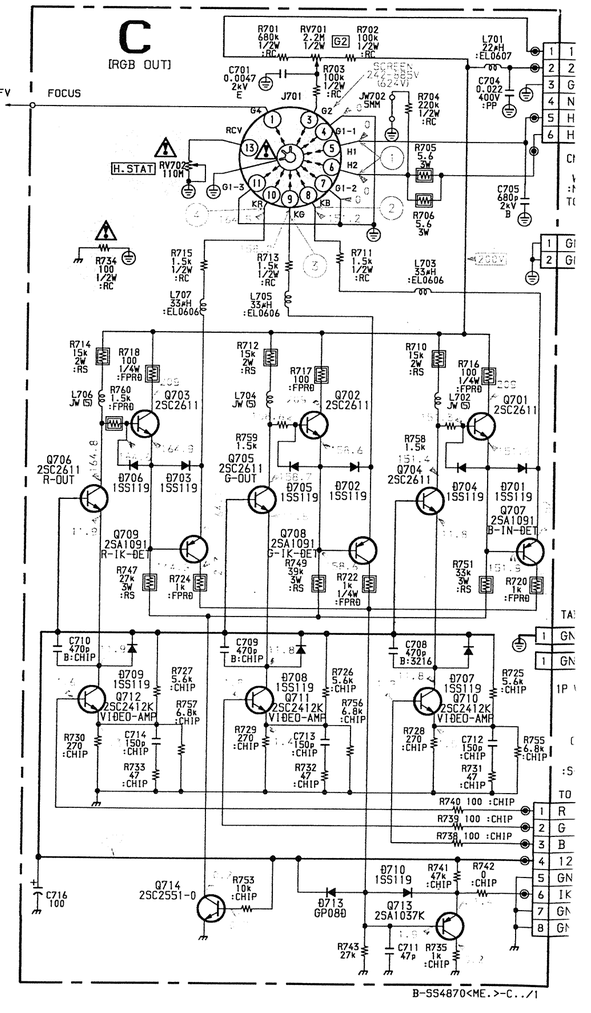


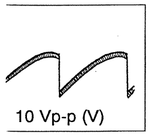
Schematic diagrams
A 2 P VM boards

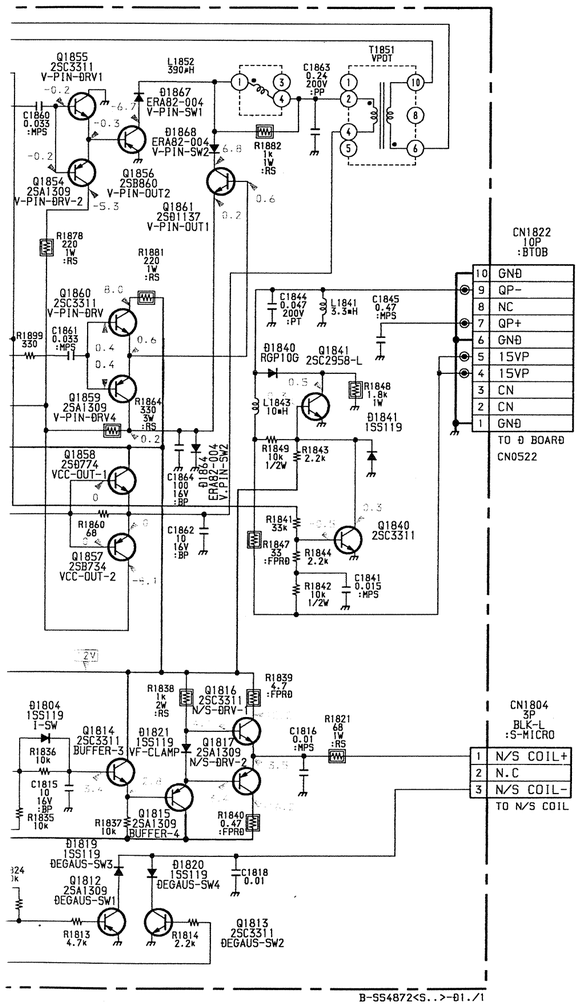
Schematic diagrams
C D 1 boards ➡

• C BOARD WAVEFORMS

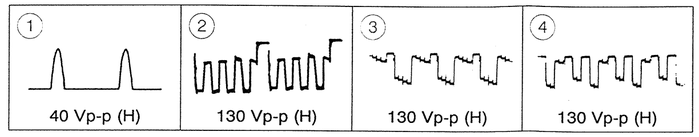


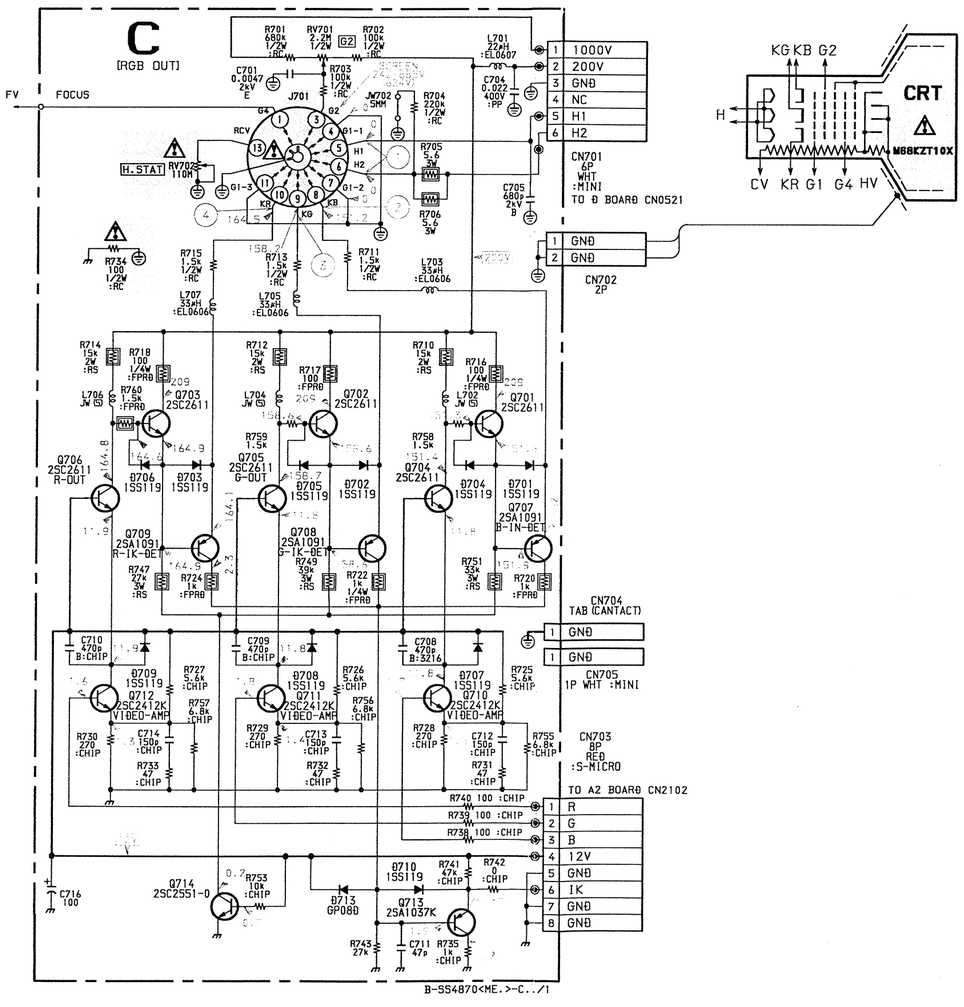






• C BOARD WAVEFORMS





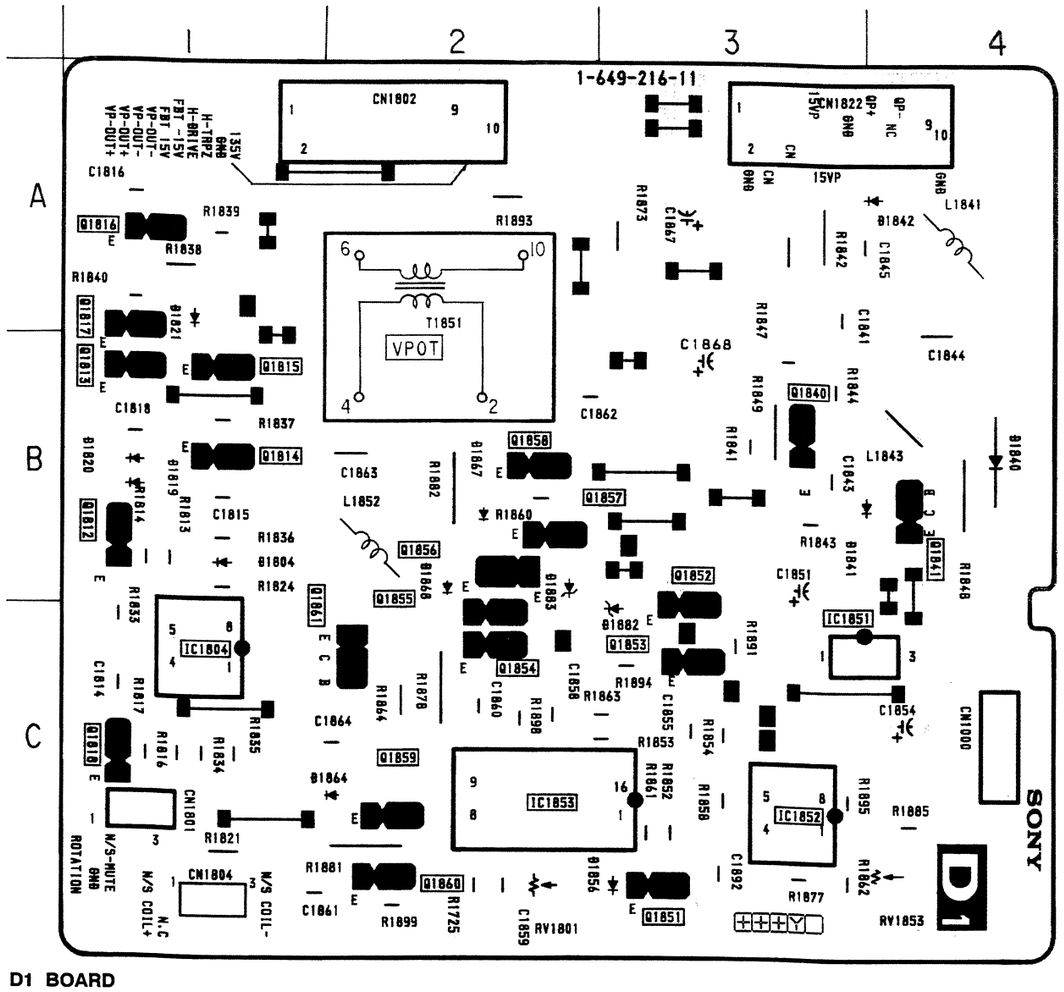
KV-K29CF1
RM-845P

D1 [ROTATION CIRCUIT, V-PIN CORRECTION, PICTURE ROTATION CONTROL, V-PIN CONTROL]

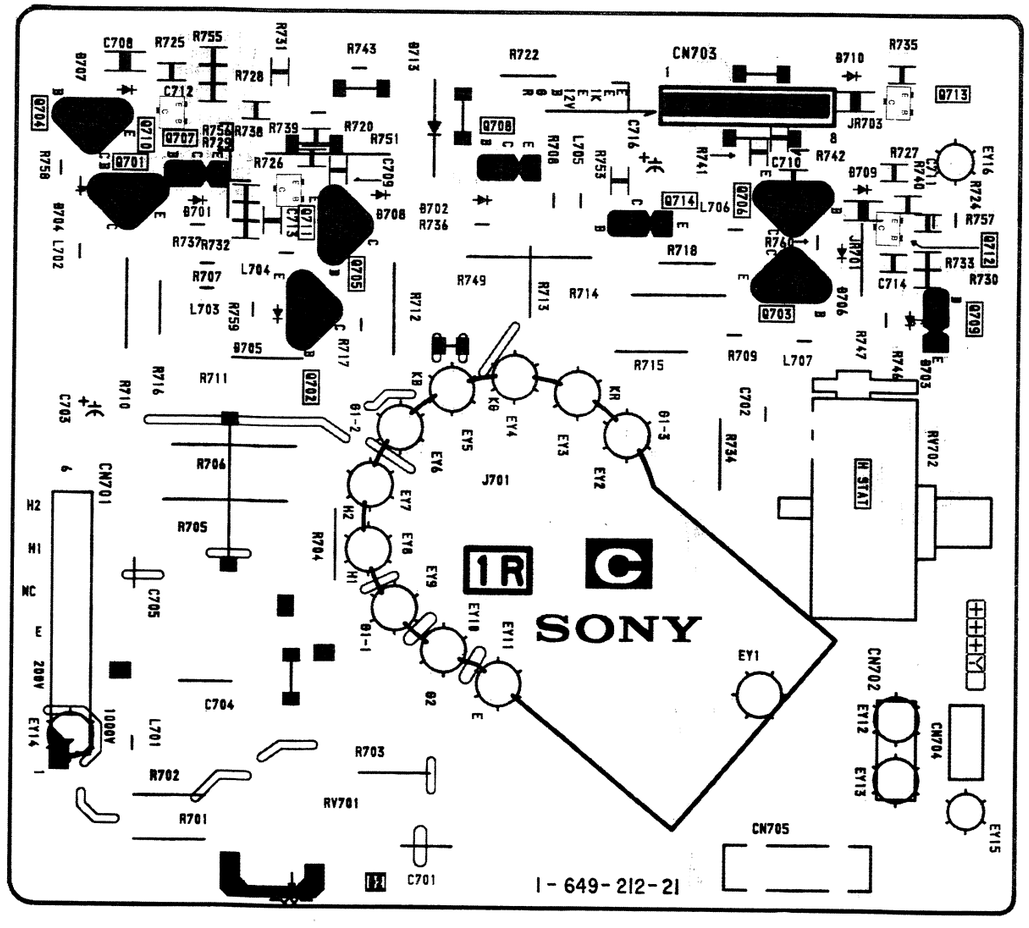
C [R, G, B OUT]

PRINTED WIRING BOARDS

– D1 Board –

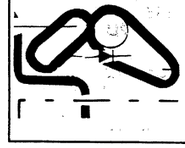


– C Board –



• **D1 BOARD**

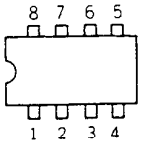
IC			
IC1804	C – 1	Q1851	C – 3
IC1851	C – 3	Q1854	C – 2
IC1852	C – 3	Q1855	C – 2
IC1853	C – 2	Q1856	B – 2
TRANSISTOR		Q1857	B – 2
Q1812	B – 1	Q1858	B – 2
Q1813	B – 1	Q1859	C – 2
Q1814	B – 1	Q1860	C – 2
Q1815	B – 1	Q1861	C – 2
Q1816	A – 1	**DIODE**	
Q1817	A – 1	D1804	B – 1
Q1818	C – 1	D1819	B – 1
Q1840	B – 3	D1820	B – 1
Q1841	B – 4	D1821	A – 1
		D1840	B – 4
		D1841	B – 3
		D1856	C – 3
		D1864	C – 2
		D1867	B – 2
		D1868	B – 2
		D1882	C – 3
		D1883	B – 2
		VARIABLE RESISTOR	
		RV1801	C – 2
		RV1853	C – 4



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

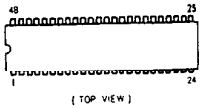
6-5. SEMICONDUCTORS

CAT24C04P
LM358P
LM393P
SDA9086-3
μPC358C
μPC393C

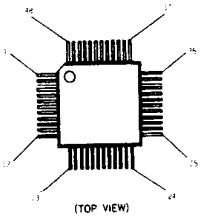


(Top view)

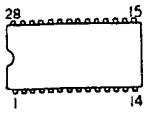
CXA1545AS
CXA1587S



CXD2018Q

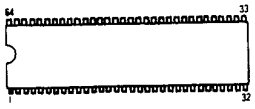


SDA9187X
SDA9188X



(Top view)

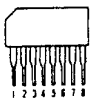
CXP80424
CXP80424-SV4652



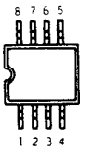
(Top view)

HZT33-02TE
μPC574J

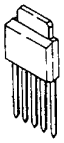
LA7016



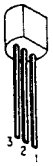
LM358PS



L78LR05D-MA

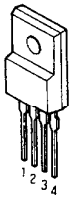


MC78L05ACPRP
NJM78L05A

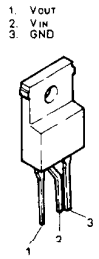


MC7809CT
MC7812CT
NJM78M09FA
TA7805S
μPC7805H

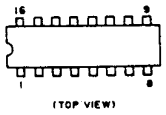
PQ05RF1



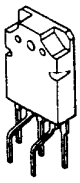
SE135N-LF12



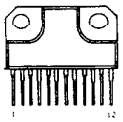
SN74LS221N
TDA4661/V2



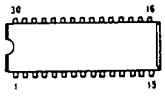
STR-81145A



TA8200AH



TA8776N



(Top view)

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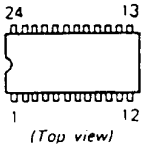
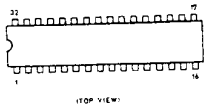


(Top view)

TDA9160/N2



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DTA144EK
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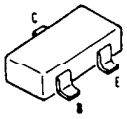
2SA1162-G
2SC2412K
2SC2412K-QR
2SC2413K
2SC2413KQ



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DTC144ES

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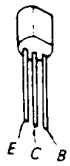

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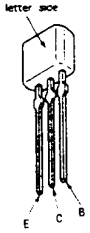

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RM-845P

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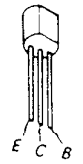

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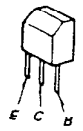
2SD774-34



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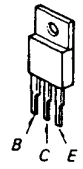

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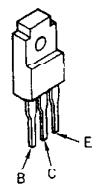
2SC3601-E

2SC3298B-O
2SC4793
2SD1137



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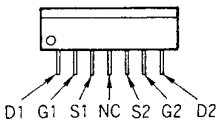

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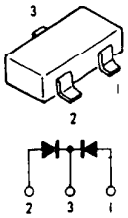

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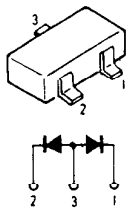

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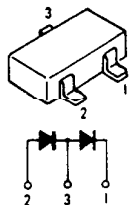

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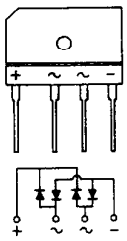

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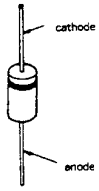
EU-1Z
EU-2
GP08D
RGP15G
RGP15J



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ERA85-009
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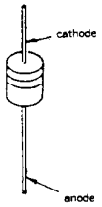
RD3.6ES-B1
RD33ES-B2
RD39ES-B
RD39ES-B2
RD4.7ES-B2
RD5.1ES-B
RD5.1ES-B1
RD5.1ES-B2
RD5.6ES-B
RD7.5ES-B
RD7.5ES-B1
RD7.5ES-B2
RD7.5ES-B3
RD9.1ES-B
RD9.1ESL
1SS119
1SS133



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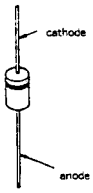

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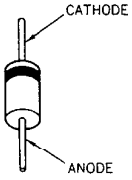
RU4DS



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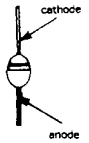
U05G



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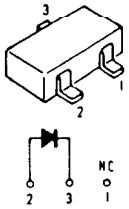
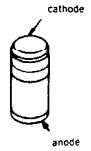
RD4.7M-B2



MA3051L-TX



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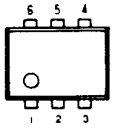
PC111YS



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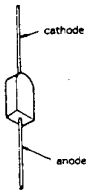

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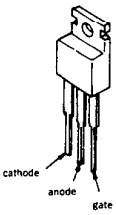
5P6M



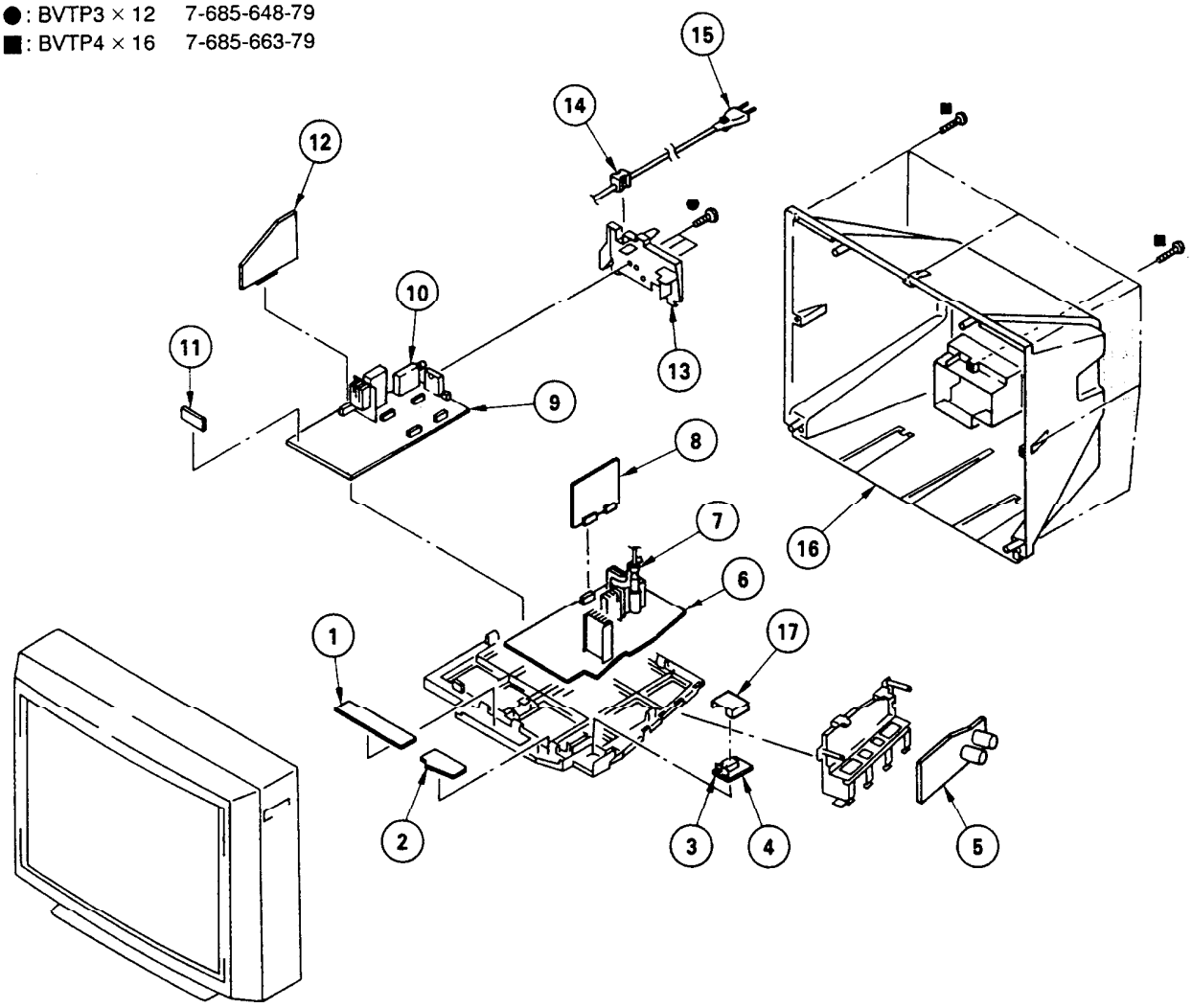
SECTION 7
EXPLODED VIEWS

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

7-1. CHASSIS

●: BVTP3 × 12 7-685-648-79
■: BVTP4 × 16 7-685-663-79

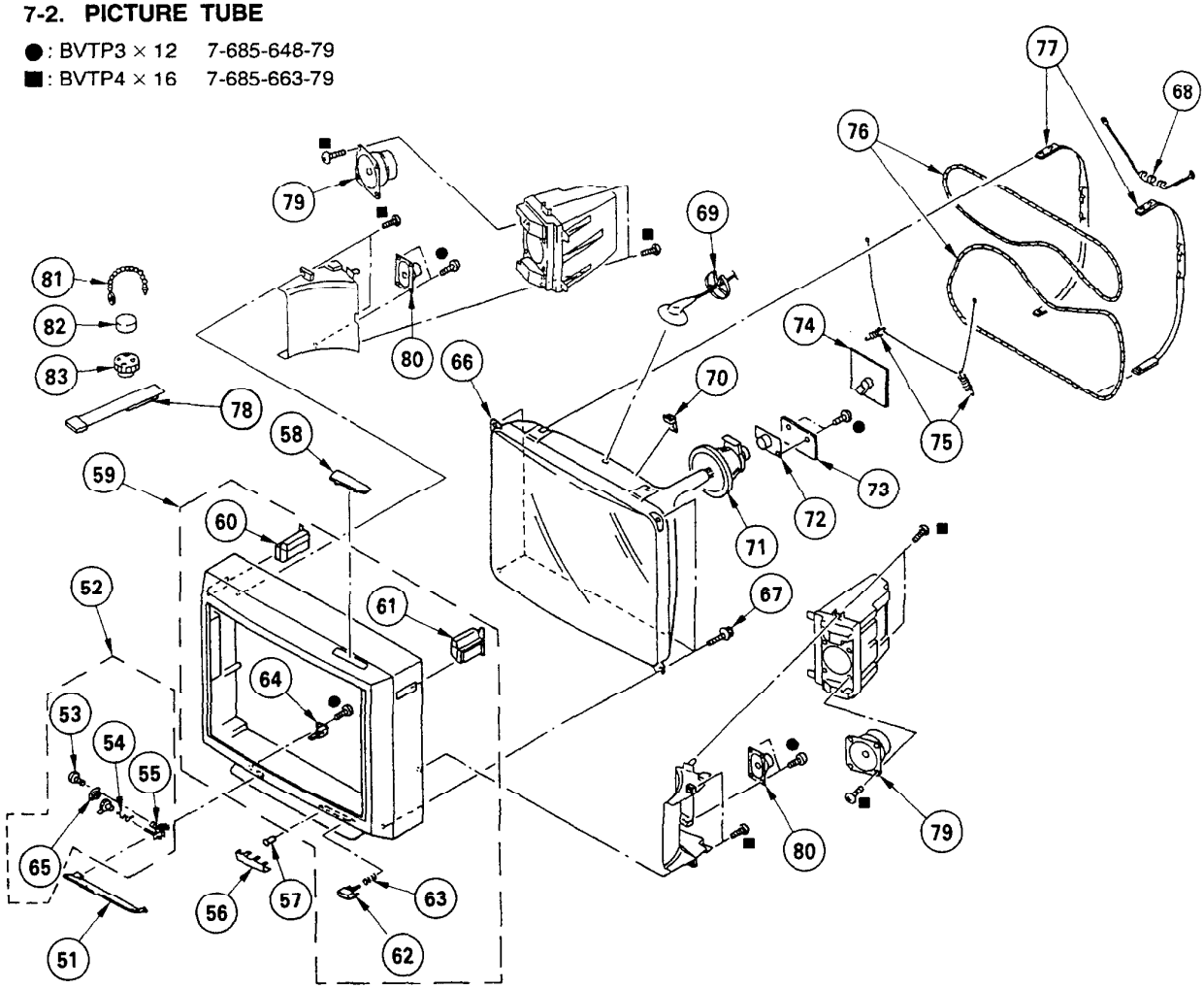


REF.NO.	PART NO.	DESCRIPTION	REMARK
1	*1-649-207 21	H2 BOARD	
2	*1-649-206-21	H1 BOARD	
3	⚠1-571-433-12	SWITCH, PUSH (AC POWER)	
4	*A-1241-131-A	F1 BOARD, COMPLETE	
5	*A-1241-139-A	F2 BOARD, COMPLETE	
6	*A-1346-238-A	D BOARD, COMPLETE	
7	⚠8-598-927-00	TRANSFORMER, FLYBACK (NX2603//M3B)	
8	*A-1346-216-A	D1 BOARD, COMPLETE	
9	*A-1297-315-A	A BOARD, COMPLETE	
10	⚠1-693-186-11	TUNER (BT-RG421)	
11	*1-651-277-21	A2 BOARD	
12	*A-1195-082-A	P BOARD, COMPLETE	
13	*4-042-949-01	COVER, TERMINAL	
14	⚠4-335-154-11	GROMMET, AC CORD	
15	⚠1-574-062-51	CORD, POWER (WITH CONNECTOR) 6.0A/250V	
16	4-043-176-01	COVER, REAR	
17	4-043-694-01	COVER, POWER SWITCH	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

7-2. PICTURE TUBE

●: BVTP3 × 12 7-685-648-79
■: BVTP4 × 16 7-685-663-79



REF.NO.	PART NO.	DESCRIPTION	REMARK
51	X-4031-956-1	DOOR ASSY, CONTROL	
52	X-4031-244-1	DAMPER ASSY	53-55,65
53	4-033-184-01	SCREW, SPECIAL	
54	4-041-016-01	SPRING	
55	4-041-017-01	SHAFT (MAIN), DAMPER DOOR	
56	4-042-936-11	WINDOW, ORNAMENTAL	
57	4-042-927-01	GUIDE, LIGHT	
58	1-467-539-11	SWITCH BLOCK	
59	X-4031-743-1	CABINET ASSY (WITH BEZEL ASSY)	60-64
60	4-042-942-11	HANDLE (L)	
61	4-042-943-11	HANDLE (R)	
62	4-042-937-01	BUTTON, POWER	
63	4-036-405-11	SPRING, COMPRESSION	
64	4-042-940-01	UNIT, LOCK	
65	4-036-880-11	DAMPER	
66	⚠8-733-841-05	PICTURE TUBE (M68KZT10X)	
67	4-390-505-01	SCREW (7), TAPPING	
68	4-043-827-11	BAND, DEGAUSSING COIL	
69	*3-704-372-11	HOLDER, HV CABLE	
70	3-704-495-01	SPACER, DY	
71	⚠8-451-422-21	DEFLECTION YOKE Y29GXA(SBN)	
72	⚠1-452-509-12	*NECK ASSY, PICTURE TUBE (NA-308)*	
73	*A-1342-239-A	VM BOARD, COMPLETE	
74	*A-1331-376-A	C BOARD, COMPLETE	
75	4-369-318-61	SPRING, TENSION	
76	⚠1-403-672-11	COIL, DEMAGNETIZATION	
77	*4-043-036-01	*HOLDER, DGC*	
78	X-4309-608-0	PERMALLOY ASSY, CONVERGENCE	
79	1-504-479-11	SPEAKER (10CM)	
80	1-504-486-11	SPEAKER (9X5CM)	
81	4-308-870-00	CLIP, LEAD WIRE	
82	1-452-032-00	MAGNET, DISK; 10MM ϕ	
83	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM ϕ	